

AIR CONDITIONING & REFRIGERATION

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NEWS

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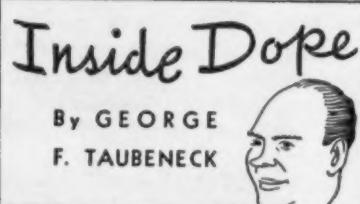
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By GEORGE
F. TAUBENECK

Learn to live and laugh —
thus delay your epitaph

Stories of the Week
Progress Thought—and
Afterthought
Let's Think About This
That's What We Hear
Things We Never Knew
'Til Now
Hooray for the Difference
How Crazy Can We Get?
Thoughts for This Week

Stories of the Week

"Herkimer is learning to swear in your school," an indignant mother wrote the principal.

"I've a mind to keep him home and teach him myself."

"Billy kissed me!" boasted Suzie.

Her mother was unsettled at this announcement, for Suzie was only 10 years old.

"And mommy, two other girls helped me catch him."

Society reporting doesn't have to be dull. There are the inevitable "boners" which creep in, such as: "She wore a dress of Chantilly lace which fell to the floor."

And then there was a time a small-town sports writer pinch hit for the society editor, with this result:

"Miss Mary Mercor and Mr. James Clipston were married today by Justice of the Peace Joe Greene in the latter's office above the railroad station. Inasmuch as Mr. Clipston is the local railway ticket agent he was able to marry above his station."

No two people are alike, and both are glad of it.

Progress Thought—and Afterthought

"Recently," said a corporation president, "I saw a statement in our house organ that when one of our outlying plants was built in the 1870's it was 'within a half-hour's drive of the office.' I questioned this sharply, since it had been my experience that neither I nor the company's driver had ever been able to make it in less than 40 minutes in a modern motor car."

"Did the house-organ people think that horse-and-buggy riders could do better?"

"Well, they produced documentary proof that this actually was the case. Eighty years ago, before traffic lights or the congestion that has made them necessary, it was possible to drive a trotting horse to that plant in 30 minutes by the clock. The horse, you see, was not only

11 Co. Reports Say:

1st Quarter Sales, Profits Improved

Detroit—Increased sales or earnings for the first quarter of 1957 are being reported by a number of firms in the air conditioning and refrigeration industry. They seem very optimistic about continuing the trend throughout the year.

Here are some sales and earnings data from quarterly reports reaching the NEWS:

McQuay, Inc. and its subsidiary, American Automatic Ice Machine Co. reported record sales of \$3,900,000 for the quarter, up 30% over last year. March had the highest sales total for any month in the company's history.

Roy J. Resch, president, expects to end the year with shipments between \$13 and \$14 mil-

(Concluded on Page 41, Col. 1)

Group Buys Control of Waterman-Waterbury

MINNEAPOLIS—A group of Twin City business and financial executives have purchased controlling interest in Waterman-Waterbury Co. here, manufacturer of heating and air conditioning equipment.

The group joined Waterbury's management operation "because of the company's strong record and growth potential," according to Harry G. Cross, chairman of the board, who made the announcement.

The news came in the midst of the company's 50th anniversary year.

Initial public announcement from the new majority stockholders indicated their first long-range goal will be to double the company's production of all units within three years.

The new owners include: David E. Sedgwick, president, who increased his previous stock holdings; Ray J. Dervey, formerly general sales manager of American Hoist & Derrick Co., St. Paul; Joseph E. Erickson, vice president and a director of Northwestern Refining Co., St. Paul.

Also, Arthur W. Carlson,

(Concluded on Back Page, Col. 3)

Schierloh Sees 'Smaller, Hotter' Electric Motors In 10 Years

SAGINAW, Mich.—Electric motors will soon get smaller and hotter, according to Tom Schierloh, service technical manager, Delco Products Div. of General Motors.

Speaking at the eighth annual convention of the Michigan Association of the Refrigeration Service Engineers Society held here, Schierloh stated that in the next 10 years, we will see changes in concept in electric motors than took place

Is the Industry Pricing Itself Out of Future Business?

(A Conscience of the Industry Editorial
By George F. Taubeneck)

From all sides we are hearing complaints that the air conditioning industry is not setting its prices realistically. Contractors and dealers and distributors (or whatever they choose to call themselves) are most vocal in asserting that "there's no money in this business." Manufacturers are unhappy with the price structure, too, for these reasons:

(1) If contractors can't make money, they won't invest enough additional capital to meet the growth needs of our industry. Nor can sufficient new dealers and contractors be recruited if "the word" is out that air conditioning is a non-profit enterprise.

(2) If manufacturers can't earn satisfactory profits,

(Concluded on Page 20, Col. 1)

What Happened In Cincinnati

1,042 Home Cooling Installations In '56 Surpasses '55 by 25%; Gains Spotty

By C. Dale Mericle

CINCINNATI—Installations of residential air conditioning registered a 25% increase here in 1956 over the preceding year, but the gains were somewhat spotty.

The annual survey of contractors and distributors by AIR CONDITIONING & REFRIGERATION NEWS turned up a total of 1,042 such installations for last year, compared with 835 in 1955 (see Nov. 28, 1955 issue of the NEWS). There were 567 jobs in 1954.

While several outlets claimed considerable gains last year over previous efforts, others were off sharply, they admitted.

Would Standardize Milk Sanitation

WASHINGTON, D. C.—Rep. Lester Johnson (D., Wis.) has introduced a "National Milk Sanitation" bill "designed to handle one phase of the restrictive and arbitrary practices now existent in milk marketing, namely the conglomeration of sanitation regulations and their misuse as monopoly tools in some places."

The bill (HR 6750) would "establish standards of identity, sanitation standards, and sanitation practices for the production, processing, transportation, sales, and offering for sale of

(Concluded on Back Page, Col. 1)

during the preceding 20 years.

Motors will run at 250° F. normally, he said. Motor cooling methods for hermetics will have to make much progress to keep up with developments in the offing.

He said that among the problems involved in higher motor temperatures was making wire coatings that could withstand the higher temperatures. Silicon, acrylic resin, and vitreous

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Anti-Trust Suit Vs. Memphis Dealers Settled

Consent Decree Stops Fixing Appliance Prices, Trade-In Allowances

WASHINGTON, D. C.—Settlement by a consent decree of the government's price-fixing and anti-trust case against the Memphis Retail Appliance Dealers Association, Inc. and seven of its members has been announced by the Justice Dept.

Last November the association and the seven dealers were charged with engaging in a conspiracy to combat discount house sales of home appliances in the Memphis area.

The U. S. specifically accused them of agreeing to stick to manufacturers' suggested list prices on appliances, setting limits on trade-in allowances, preventing sales by distributors directly to consumers, and setting limits on appliance advertising.

Under a consent decree filed in U. S. District Court in Memphis, the complaint was settled with the association and the seven members agreeing not to fix prices, set limits on trade-in allowances, boycott any person in the appliance business, or refuse to advertise appliances at prices lower than manufacturers' list prices.

These retail dealers are enjoined from acting in concert with one another, either through the association or through a successor, to do any of the things prohibited the association.

In addition, the association

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Government Air Conditioning

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What Happened To Home Cooling

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Tecumseh Plans Central Compressor Warehousing, New Financial Setup

TECUMSEH, Mich.—A new program designed to make the handling of in-warranty and out-of-warranty hermetic compressors more attractive for the Tecumseh-authorized independent air conditioning and refrigeration equipment and supplies wholesaler has been announced by Tecumseh Products Co.

Principal elements of the program are new financial arrangements, and a new central warehousing program at the Marion, Ohio plant of Tecumseh Products Co., which will speed shipments to the field.

One of the purposes of the program is to make available in the hands of the equipment and supplies wholesalers, supplies of compressors for ready replacements of units in or out of the warranty period.

The inventory of units in the hands of the supplies wholesaler can be tapped to handle the in-warranty replacement requirements of a manufacturer of complete air conditioning or refrigeration systems, who may not want to burden his own field distribution setup with handling the warranty problem.

Special inducement to the supplies wholesaler to handle the exchange of in-warranty compressors in the field for an end-use manufacturer is incorporated in the new program. In addition to payment of freight both ways by Tecumseh, the wholesaler will have better control of his inventory and will gain from greater store traffic, according to Tecumseh officials.

The Tecumseh warranty on compressors extends to 20

months from the date of manufacture.

Compressors that are in the range of 21 months to 60 months from date of manufacture are considered out-of-warranty by Tecumseh, although they may be in the extended warranty period of the manufacturer of a complete or "end use" air conditioning or refrigeration product.

On such compressors, the wholesaler who makes the exchange will charge the normal price, less such allowance for the compressor turned in for exchange as is determined in the transaction between the wholesaler and the customer.

Compressors which are over 60 months from date of manufacture are handled on what Tecumseh terms a "straight repair and return basis." In this instance, if the compressor is repairable, the customer pays a repair charge, depending upon the age and condition of the

compressor. When returned, the compressor will carry a new 20-month warranty.

These provisions on the exchange of compressors in and out of warranty apply to Tecumseh hermetic compressors only, the company pointed out.

In the warehousing part of the new program, a special warehouse with 30,000 sq. ft. of storage area has been established in Marion, Ohio, to carry an inventory of compressors and high sides maintained on the basis of 15-day normal usage, the manufacturer explained.

The replacement stocks will be supplied from production runs, with inventories established on the basis of usage patterns. Emergency shipments of single compressors will go out within 24 hours. Orders can also be accumulated for shipment in mixed truck or carload lots.

'Forecast' To Highlight ASRE-Region 15 Meeting In Seattle May 10-11

SEATTLE—Technical sessions and a forecast of the future of the industry highlight the two-day program for the second annual meeting of region 15, American Society of Refrigerating Engineers, to be held in the Mayflower hotel here May 10-11.

Region 15 includes Western Canada section of Vancouver, B. C.; Oregon section of Portland; and Pacific Northwest section of Seattle.

FRIDAY, MAY 10

3:30 p.m.—Governor's round table. Presiding will be Edward Simons of San Francisco, ASRE past president; and ASRE directors H. M. Hendrickson, Charles T. Hamilton, and Charles L. Hall.

6:30 p.m.—Cocktail hour.

7:30 p.m.—Banquet and entertainment. Toastmaster, Sherman W. Bushnell of Seattle. Address by ASRE past president Edward Simons on "Old Roads and New Trails."

SATURDAY, MAY 11

9:15 a.m.—Technical session, ASRE director Charles L. Hall of Seattle presiding:

"The Present Trend In Food Store Refrigeration Equipment," John H. Spence, service manager, Hussmann Refrigeration, Inc.

"Two Stage Refrigeration," by Robert B. Holland, San Francisco, refrigerating engineer and consultant.

Noon—Hospitality hours, courtesy wholesalers of Seattle.

12:30 p.m.—Luncheon.

Friends of members are welcome as guests at all sessions. Available for the ladies are Saturday morning tours of Seattle and Puget Sound.

Trane To Condition 30 N. Y. Subway Cars

LA CROSSE, Wis.—The Trane Co. has been awarded a contract to provide air conditioning equipment for 30 subway cars for the Hudson and Manhattan Railroad Co., New York City, H. C. Rooks, Trane vice president, announced.

The cars are being built by the St. Louis Car Co., St. Louis. The air conditioning equipment provides for a 10-ton system for each car with a complete air change every minute.

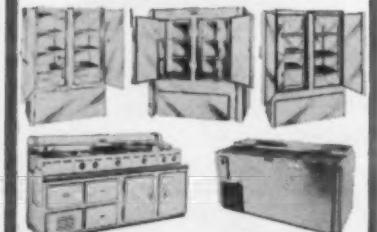
Sets Up Freezer Food Service

NEW HAVEN, Conn.—James E. Kelley, formerly head of Kelley-Mohican food chain, has organized the Malley-Kelley Freezer Food Service here in conjunction with the Edward Malley Co., department store.

FOSTER builds over

200

Matched Models



OF WELDED ALL-ALUMINUM REFRIGERATORS AND FREEZERS especially designed for modern food service dependability, 24 hours a day — year after year.

One Line One Price One Quality
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REFRIGERATORS AND FREEZERS

Foster Refrigerator Corp. Hudson, N. Y.



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BULLETIN C-192-7

KRAMER TRENTON CO. • Trenton 5, N.J.





Artist's conception of all Bendix-Westinghouse plants placed in one common grouping—a modern industrial community employing thousands of people and embodying nearly a million square feet of floor space.

THE HOUSES THAT DEPENDABLE COMPRESSORS BUILT!

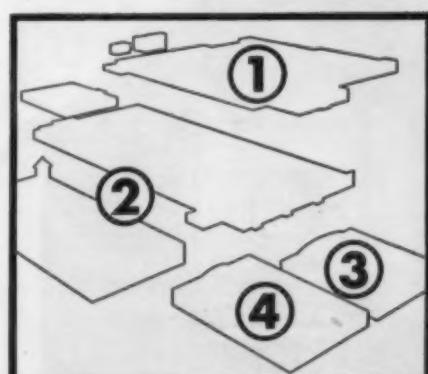
Over the past twenty-six years, Bendix-Westinghouse has built millions of compressors for the trucking industry. The same standards of quality that convinced those people our product was dependable are convincing refrigeration and air conditioning people that Bendix-Westinghouse refrigeration compressors possess a like dependability.

Here, at the Evansville Division, where our complete line of hermetics are built, we're practicing the same rigid quality control and manufacturing policies that have made our company

a lasting success in the automotive field.

We would like the chance to tell you in detail the many painstaking steps we employ to assure the built-in dependability of every Bendix-Westinghouse compressor. Also, we'd welcome the opportunity to quote prices and delivery on our compressor line ranging in capacities from $\frac{1}{4}$ to $7\frac{1}{2}$ H.P.

Write us for further information and a prompt visit from one of our regional managers. Evansville Division, Evansville 11, Indiana. Export Sales: BENDIX INTERNATIONAL, 205 E. 42nd Street, New York 17, New York.



- 1 Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
- 2 Bendix-Westinghouse, Evansville Division, Evansville, Indiana
- 3 Bendix-Westinghouse, Berkeley, California
- 4 Bendix-Westinghouse, Oklahoma City, Oklahoma

EVANSVILLE DIVISION of
Bendix-Westinghouse

Automotive Air Brake Company

For more information about products advertised on this page use Information Center, page 29.

AMC Cuts Loss But Kelvinator Slumps

DETROIT—Despite a drop of \$39 million dollars in net sales during the six months ending March 31, American Motors Corp. cut its net operating loss by more than \$2 million over the loss reported for the same period last year.

This was revealed in a six-months report released recently by George Romney, president.

Sales of the corporation and its subsidiaries for the period were \$186,932,383 as against \$225,919,282 in the same six months a year ago. Net operating loss was \$5,332,471 as compared with \$7,969,474.

"However, even more extreme competition has returned in this industry and recent price cutting has created a situation in which our Kelvinator Div.'s results this year will not equal those of a year ago," he said.

Carrier Introduces 'Spin-Dry' Central Air Conditioner for Textile Plants

SYRACUSE, N. Y.—Carrier Corp. has announced a "revolutionary" new central air conditioning device for textile and other industrial plants which, the company claims, "takes only one-third the space of present equipment, provides more accurate control of humidity, and virtually eliminates system cleaning and maintenance."

Called the Carrier "Rotaspay Weathermaker," the device incorporates an entirely new "spin-dry" principle to remove water droplets, lint, and other foreign matter—an especially important factor to many industrial installations, according to Charles V. Fenn, vice president.

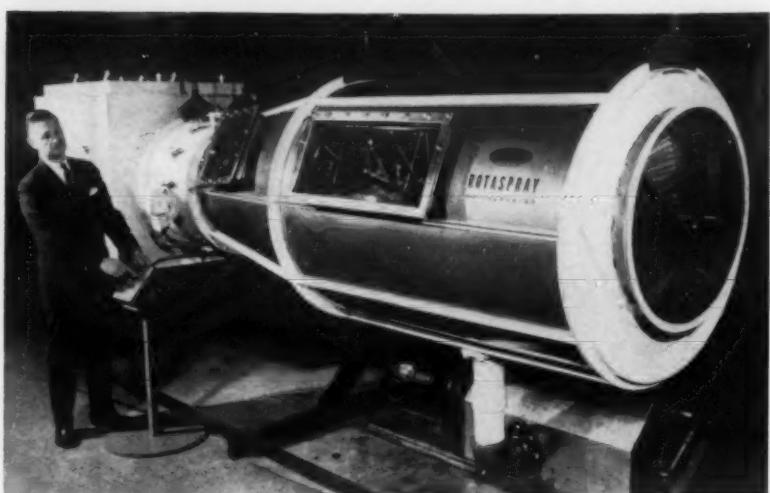
Fenn, who heads Carrier's Machinery & Systems Div., said the new system will also permit

higher air velocities, while handling a greater volume of conditioned air for its size.

Key feature of the unit is a self-cleaning rotating eliminator wheel which operates at air velocities up to 2,400 f.p.m. Its self-flushing action virtually eliminates unit cleaning and maintenance, Fenn said.

A mixture of air taken from the manufacturing area and from the outside is drawn into the unit. Propelled through a "hurricane" of spray water and the rotating eliminator, the reconditioned air is gently diffused throughout the factory or textile mill and the process repeated.

"Perfection of an eliminator wheel which can effectively separate wet from dry and dis-



HERMANN HOFFMANN, general sales manager of Carrier's Machinery & Systems Div., mans the controls of the Rotaspay Weathermaker which it is expected may obsolete current textile mill air conditioning installations. It requires only one-third the space of present-day equipment, provides more accurate control of humidity and virtually eliminates system cleaning and maintenance, according to Carrier.

pose of lint and other foreign matter trapped in the water droplets has been an unsolved problem for several decades," Fenn declared.

"It means Carrier can economically reduce the size of large central air conditioning equipment by using higher velocities to obtain the same air quantities. More accurate control of temperature and humidity is also accomplished," he stated.

One of the new Weathermakers installed in a typical sewing plant has been in daily operation for almost a year and has required no attention. This record is still being maintained, he added.

"A major cost reduction provided by the new unit is elimination of the many manhours spent in cleaning conventional apparatus," it was stated. "This is particularly true of textile mills where an entire day per week may be spent in cleaning."

Aerodynamically styled, the Rotaspay resembles a cylinder slightly thickened at one end. Sizes will range in length from 16 to 23 ft. and from 4 to 7 ft. in diameter at the large end. They can be suspended from the ceiling, eliminating the need for floor space, "resulting in greatly reduced installation costs."

"Spray nozzles used in the Rotaspay to atomize water will not clog," it was asserted. "Orifices made of a special elastic composition can stretch to twice their normal size. Foreign matter temporarily plugging the nozzle is 'spit out' by water pressure."

Frigidaire To Hold One-Day Service Schools In Detroit

DETROIT—Frigidaire Sales Corp. here will conduct a series of 10 one-day service schools for dealer servicemen on replacement of components on household refrigerators, food freezers, and window air conditioners.

The sessions will be held at the General Motors Training Center, 7707 W. Chicago, May 13 through May 24, from 8:30 a.m. to 4:30 p.m.

PUSHBUTTON
heating-cooling control

Cash in now on
the sales power
of PushButton
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White-Rodgers

Fashion

THERMOSTAT

adds the sales power of

Thermostat and sub-base

for every heating-cooling system!

Each equipped with latest

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resistor...can be set to

match any primary control.

For more information about products advertised on this page use Information Center, page 29.

Amco

CONDENSATE PUMPS

- ★ 20 FT. HEAD
- ★ FLOAT CONTROL
- ★ QUIET-HEAVY CONSTRUCTION
- ★ PLUG IN PRE-WIRED

AMERICAN COMFORT MFG. CO.
2401 MAIN ST. EVANSTON, ILL.

National Bureau of Standards

New Cooling, Heating, Refrigeration Unit To Develop Evaluation Ways, Standards

WASHINGTON, D. C.—Paul Achenbach has rejoined the staff of the Building Technology Div. of the National Bureau of Standards. He will head the newly-reorganized Air Conditioning, Heating, and Refrigeration Section.

The new section's work will involve the determination of design criteria for and the development of methods of evaluation and standards for air conditioning, air cleaning, heating, humidity-controlling, refrigerating, and ventilating processes and systems for buildings and other enclosed spaces.

Achenbach came to the bureau in 1937 as a mechanical engineer in the Heat Transfer Section of the Heat & Power Div., which later became the Heating and Air Conditioning Section of the Building Technology Div. He served as assistant chief of the latter section for nine years. Achenbach conducted and supervised research on all phases of heating and air conditioning.

For the past year Achenbach has been in charge of the development and design of a human calorimeter at the Naval Medical Research Institute in Bethesda, Md., where he participated in physiological research in human metabolism and is co-author of a paper on that subject which was recently presented at the International

House Unit OK's Repeal Of 5% Components Tax

WASHINGTON, D. C.—Final approval to major portions of its pending excise tax revision bill was given by the House Ways and Means Committee.

Among the numerous changes in Federal excise taxes included in the bill is the proviso that the 5% tax on components for household refrigerators and freezers would be repealed. Electric direct-motor fans and air circulators would be taxed only if they are of the household type, rather than if they are not of the industrial type as at present.

Thermo Products To Build Branch Plant In Denton, N.C.

DENTON, N. C.—Thermo Products Co. of North Judson, Ind., manufacturer of heating and air conditioning equipment, plans to build a branch plant here, according to Dean Culver, southern representative of the firm.

Completion in July was predicted for the plant, which will ultimately employ about 100 men.

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"CHROMSPUN"
FADEPROOF FABRICS
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Westinghouse Plant Returns to 5-Day Week

COLUMBUS, Ohio—Westinghouse Electric Corp.'s appliance plant here, on a four-day week since the first of April, returned to a five-day week, it has been announced.

About half the plant's 4,000 employees went back to a five-day work schedule the last full week in April; the remainder are going this week. Westinghouse makes refrigerators, freezers, dishwashers, and combination washer-dryers at the plant.

35,000 New Room Units In '57 Foreseen by Florida Utility

MIAMI, Fla.—The Florida Power & Light Co. expects 35,000 room air conditioners and 21,000 tons of commercial air conditioning to be added to its lines this year.

Fitts To Get MCA's 'Distinguished Service Award' at May 7-10 Meeting

NEW YORK CITY—Joseph C. Fitts, Hackensack, N. J., will be the recipient of the Distinguished Service Award for 1957—a citation given each year by the Mechanical Contractors Association of America (formerly HPACCNA) to a member who has contributed long and lasting service to the mechanical contracting industry.

Assistant secretary and secretary of the national association for more than a third of a century, Fitts will receive the award during the 68th annual convention of the MCAA to be held May 7-10 at the Fontainebleau hotel, Miami Beach, Fla.

"As secretary of the association and editor of its official bulletin, his guidance through the years resulted in successful

industry-wide standards for materials, equipment, and data—Certified Pipe Welding Program—NRA Code on Fair Trade Practice—Apprentice Training Program—Certified Heating, and many other important efforts," the announcement noted.

Detroit Heating Men To Hear About 'Home Cooling Future'

DETROIT—"Your Future in Residential Air Conditioning," a talk by Pierce Burke, assistant sales manager, Weathermaker Dept., Carrier Corp., will keynote the dinner and meeting of the Detroit Warm Air Heating Association, Thursday evening, May 9, at the Fort Shelby hotel.

Announced times are: dinner, 6:30 p.m., meeting, 8 p.m.

"The preferred line for profits!"

Vornado

SELF-CONTAINED

CENTRAL AIR CONDITIONERS

Here are the reasons why Edgar Parrington, President of Parrington Engineering, Dallas, Texas, prefers Vornado: "I prefer Vornado Central Air Conditioners for two reasons: One—for profits; and two—for its easy installation. My crews can handle most installations and connect to existing duct work in a matter of three to four hours. Dor-

mer installations, crawl space, basement, roof, garage, or furred-down hallway are equally simple and fast. "As an air conditioner contractor, I appreciate the virtually trouble-free service you can expect from Vornado. Both of these factors: fast, easy installation, and dependable service—mean larger margin of profit for my operation."

ONLY SYSTEM OF ITS KIND

PROVED IN THOUSANDS OF HOMES!

Vornado installs quickly...easily...anywhere!

COMPLETELY PACKAGED... Everything in one compact package. Air-cooled operation eliminates extra plumbing...water connections...outside accessories.

TROUBLE-FREE PERFORMANCE...powerful! Two hermetically sealed, heavy-duty compressors deliver unequalled capacity. One operates continuously...constantly controls humidity. Other cycles on and off, as needed, for economy's sake.

FULLY GUARANTEED...by the manufacturer! Factory warranty assures satisfactory service. Over 7 million satisfied Vornado users!



ADD-ON
Compact unit connects...quickly and easily...to existing warm-air furnace duct work.



SEPARATE SYSTEM
Prefabricated Vornado duct cuts installation time to minimum! Light...easy to handle. Sturdy...and highly efficient!

I want complete information on your new versatile, low-cost Vornado Central Air Conditioners. It is understood there is no obligation.

AC-5/57

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World's leading full line manufacturer of comfort cooling appliances
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Distributed in Canada by: Alliance Meters, Schell Ave., Toronto 10.

send
THIS
COUPON
TODAY

The O. A. SUTTON CORPORATION, INC.
1812 W. SECOND ST.
WICHITA, KANSAS

375,000 Tons of Cooling Programmed By GSA for Existing Govt. Buildings At Estimated Cost of \$328,000,000

WASHINGTON, D. C.—"We are well aware of the need for air conditioning in most of the federal buildings under our jurisdiction," declared F. Moran McConihe, commissioner of public buildings, General Services Administration, before the recent government-industry symposium on air conditioning here.

Outlining GSA's "ultimate plans," McConihe explained, "Generally speaking, we hope to air condition all federally-owned buildings east of the state of Wyoming except those in the upper tier of New England and in northern New York, Michigan, Wisconsin, Minnesota, and North Dakota. We also include most of the states in the southwest and the interior of southern California.

"We have estimated that it will cost approximately \$178 million to air condition the 1,883 existing buildings in this area," he told the symposium.

"At the beginning of this fiscal year a relatively small percentage of government buildings in which we have an interest—I would say no more than 10%—were air conditioned," McConihe commented. "The small share probably reflects the fact that prior to last year, no funds had ever been specifically appropriated for this.

Appropriation Starts Cooling Project

"However, last year we were given an appropriation for air conditioning—\$18.1 million—which enabled us to get a start on our program in fiscal year 1957," he disclosed. "Of the total, \$4.5 million was earmarked for use in the District of Columbia and \$13.6 million for use outside.

"In the utilization of this appropriation," McConihe explained, "we are concentrating on installations located in the southern Atlantic seaboard and Gulf states and on larger buildings elsewhere in our target area. We are using some funds to advance plans and specifications for projects which we hope to complete out of our 1958 budget," he said.

"For fiscal 1958, the first full year of our air conditioning program, we have requested \$44,850,000. This amount would be applied, as was our 1957 appropriation, against our long-range requirements for 375,000 tons of air conditioning to be installed at a cost of \$328 million," McConihe declared.

"How long it will take to complete the whole program, or even the first phase of it in which we currently are engaged, depends on how rapidly funds are made available in the government's hard-pressed budgets. We originally thought our objectives could be achieved within seven years," he disclosed. "It now seems likely that we will have to revise our planning in order to extend the program."

Pointing out that the above referred to existing structures, McConihe said that "as for new construction, it is GSA policy to install air conditioning where warranted."

"Our present policy does not include air conditioning temporary buildings or rental property. However, we are making air conditioning a requirement in many of the buildings which we are leasing."

To Concentrate On Central Units

"Although we concentrate on central and not piecemeal installation, the principal deterrent to more rapid progress of our plans is the high cost of air conditioning existing buildings," he commented.

"Each is, of course, a custom job which usually demands the greatest ingenuity and skills from the engineers, contractor,

and manufacturer concerned. You may be interested to know that it is costing GSA over \$6 million to design and install air conditioning in a single structure here in Washington—the south building of the Department of Agriculture....

"As I have said, we plan air conditioning for new construction. We cannot, however, neglect the thousands of government employees whose work is seriously impaired in prolonged periods of intense heat in existing buildings. To bring them relief is a big job, but a priority job.

"I believe [the Civil Service Commission] will agree that here in Washington, and elsewhere, agencies in air conditioned buildings have a distinct advantage in hiring and holding employees....

"We would like to solve another problem which concerns employees—that of educating them to the proper use of air

All air conditioning purchases by the Federal government, except for the Department of Defense, are handled by the General Services Administration. The thinking of this agency was outlined at the recent government-industry symposium on air conditioning in Washington, D. C. Commissioner F. Moran McConihe of Public Buildings speaks for GSA on this page; Deputy Commissioner Fred S. Poorman offers his views on the next page. Floyd S. Bryant presented the viewpoint of the Defense Department in the April 29 issue.

conditioning equipment.

ing costs through tax deductions.

Requests Ideas

"Perhaps you people have some ideas on how we can make the government worker more fully aware of his responsibilities in this field," McConihe said.

"The professional assistance which the industry devotes to our program has helped us to make the most of the money we have to spend. We must, of necessity, make our air conditioning dollars stretch.

"We must also stretch the life of the equipment we install for, unlike private business, we cannot write off air condition-

ing costs through tax deductions.

"This means we must be alert constantly to new developments—in design, techniques, and equipment. Again, we are dependent upon you of the industry to keep us abreast of these developments and to help us to determine the type of equipment which is best for a specific installation or application," he said.

"It is important that we know what you are planning so we may take anticipated developments into consideration in the very preliminary stages of our projects," he emphasized.

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86,000 to 74,500							
67,000 to 54,500							
62,000 to 50,000							
50,000 to 36,500							
39,000 to 32,000							
32,000 to 23,500							
23,000 to *19,000							
BTU's per HOUR							
	BUDGET 301	SUPER 352	BUDGET 401	SUPER 452	BUDGET 601	SUPER 652	SUPER 802

7 NOT 3 PRICE STEPS TO BEAT COMPETITION!

*Lower Figures are ASRE Ratings

Govt. Agencies Have 'Fourfold Problem' With Air Conditioning, Symposium Told

WASHINGTON, D. C.—Government agencies have a four-fold "problem" in connection with air conditioning, according to Fred S. Poorman, U. S. deputy commissioner of public buildings.

In a talk before the recent government-industry symposium here, Poorman broke down the problem as:

"1. The development of well documented air conditioning policy together with a program of essential requirements which will prove acceptable to budget officials and Congressional committees. Without this," he said, "no Federal agency is going to get very far with its air conditioning program;

"2. Optimum correlation of policies, practices, and criteria

among the government agencies and the translation of these criteria into suitable designs largely through use of private engineering organizations;

"3. Industry's assistance in standardization, and

"4. Provision for adequately trained operating and maintenance personnel."

"The Department of Defense has made significant progress in the development of uniform design criteria for air conditioning. Other government agencies now actively concerned with the air conditioning of buildings and other special purpose facilities," Poorman suggested, "should find it advantageous at this time to sit down across the table with industry —by utilizing the services of

the Business and Defense Services Administration of the Department of Commerce and its related industry advisory committee for air conditioning—for the purpose of developing reasonably uniform regulations and criteria for the air conditioning of both new and existing normal type government-owned buildings. . . .

"In viewing the long range aspects of the government's potential workload in designing, installing, and maintaining air conditioning facilities during the next five to 10 years (and this anticipated program may well amount to in excess of \$1 billion throughout all civilian and military establishments), we are now faced with the necessity of developing person-

nel or employing engineering firm with specialized air conditioning background so as to give proper recognition for a field of work that should not now be incidental and subordinate to the broad field of mechanical engineering and related mechanical trades," Poorman declared.

"I hope that the designing firms and our educational institutions will view this problem of specialization with realism and that government agencies and the Civil Service Commission will give it appropriate consideration," he added.

"We have found it appropriate to employ the services of engineering firms to design the major share of air conditioning for existing buildings," Poorman disclosed.

"Through the cooperation of the Directorate of Facilities Support, Air Conditioning Section, Installations, Headquarters, U. S. Air Force, we are

also updating the knowledge of approximately 40 of our regional engineers by exposing them to current thinking relating to research, development, and design trends now taking place throughout the industry," he revealed.

Need for Education

"While our contract engineers would benefit from a well organized industry-sponsored educational program to similarly acquaint them with current thinking, we feel that it is incumbent upon industry representatives to become fully cognizant of our requirements and potential workload and to actively furnish our regional offices and contract engineers with proper technical data to assure that we get the quality type of air conditioning installations which are essential.

"I was much disturbed a few days ago to find that the representatives of one of your largest associate manufacturers had never visited our regional office located in his city in spite of the fact that this office is now in the process of designing approximately 50 air conditioned projects for existing government-owned buildings," Poorman declared.

"The full impact of air conditioning focuses attention on the urgent need for industry to establish closer and more throughout liaison with architectural and engineering groups in the knowledge that controlled climate within these structures will open entirely new approaches in the use and application of materials, equipment, and related building projects," he said.

Rapid Growth Problems

"The air conditioning industry obviously faces the problems inherent in the rapidly expanding fields of electronics and mechanical facilities: i.e., the tendency to underdesign and overrate units to meet a highly competitive market. It is in this area that a great service to the government is possible.

"Lacking reasonably uniform standards and practices within an industry, a government agency must specify arbitrary limitations through the application of reasonably rigid specifications. Where minimum standardization within the industry is present, the number of producers whose product can be expected to fail to meet specifications requirements in some details will be large.

"A BSDA-sponsored undertaking in the matter of standardization, common specifications, ratings, and manual controls, would be of great assistance," Poorman suggested.

"Lastly, there is a serious problem of training our present maintenance and operating personnel to meet this new requirement. Many of our buildings are located in smaller communities isolated from other facilities. We must expand the knowledge of our personnel currently assigned to these buildings to insure their ability to operate and maintain air conditioning equipment. Here again, the advantages of optimum standardization in equipment, manual controls, and both maintenance and operating manuals would be of great assistance to us.

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You get 7 units with a cooling range of 19,000 to 86,000 BTU's per hour... (most others give you only 3). With Westinghouse you have "Just Right" cooling at just-the-right price for all prospects.

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IT'S A FACT! Cooling requirements differ with each home. For example: size, style, exposure, climate, size of family, and more, all make a difference. Yet, "by guess and by gosh" competitors still try to satisfy the cooling needs of all homes with only 3 units.

YOUR ANSWER TO COMPETITION! Dealers who try to sell all prospects, regardless of need, with but 3 inflexible units are working with the odds against them. To be safe, they are forced to bid a 5 HP price on many 3½ HP jobs . . . or hope that an underpowered unit won't bring complaints. With Westinghouse there are no "too much or too little" problems . . . you can close each sale with cooling capacity that's "just right" for the job. Best of all, there is both a Budget and a Super line to meet your competition profitably!

MASTER BOTH HEAT AND HUMIDITY! Westinghouse makes it possible for you to match the BTU requirements of any home and master humidity too. You get the right air cooled condensing unit and its companion cooling coil to best meet the comfort needs of your customers—where you sell. You get complete mastery of heat and humidity with only 7 basic units.

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J-80542-A

For more information about products advertised on this page use Information Center, page 29.

30-Ton Self-Contained System Air Conditions Church Noiselessly Without Sacrificing Sunday School Space



CIRCULAR outlets in sanctuary were installed without disturbing new interior decorations by running a large main trunk line through the attic and branch lines to supply air to the six round ceiling diffusers painted off-white to match the acoustical ceiling.



FOUR-WAY directional grilles in social hall duct-work distribute air with minimum of noise.

CONTRACTOR Bill Smith poses beside 30-ton self-contained unit and cooling tower mounted on "I" beams on roof above raised wall of old addition and wall of new addition. Main ducts are installed on the roof, eliminating need for inside machine room.



Airtemp unit for the job.

MOBERLY, Mo.—Installing air conditioning equipment without sacrificing any classroom space, of which there was already a shortage, was one of the major problems facing the building committee of Trinity Methodist church here when it began consideration of air conditioning.

After several bids and proposals had been submitted, the job went to Bill Smith, of Bill Smith Refrigeration Co., local Chrysler Airtemp dealer. Smith selected a 30-ton self-contained

level, he built up two pilasters to the level of the top of the wall of the most recent addition and laid I-beams across.

The 30-ton unit, circulating pump, and cooling tower were hoisted up and set in place. In this location, the equipment cannot be seen from either the front or side street.

Two main ducts deliver conditioned air; one to the classroom area and the social hall and kitchen in the basement; the other to the sanctuary with ceiling outlets for both the main sanctuary and balcony.

The arrangements for the classrooms enabled them to be supplied by short branch ducts from the main duct coming down from the roof through small closets on the second, first, and basement floors. The main duct continues along the ceiling of the nursery in the basement, across the kitchen, and along one edge of the social hall.

Sizes Ducts for Low Velocity

Smith sized the ducts for low velocity and used four-way directional grilles with opposed blade dampers. This enables the classroom areas as well as the social hall to have proper air distribution without noise, according to Smith.

The women of the church were particularly interested in having the kitchen cool, since dinners are prepared here for church functions. This was accomplished by locating a supply air grille at one end of the rectangular kitchen.

Probably the most delicate problem faced by the building committee was how to air condition the sanctuary without detracting from the beauty of its recently-redesigned interior.

This was done with a large main trunk line that goes through the attic. Branch lines supply air to the six round ceiling outlets that were painted an off-white to match the new acoustical ceiling.

Here again Smith was determined not to have any noise. This was accomplished, he explained, through oversizing of the ductwork and lining it with insulation.

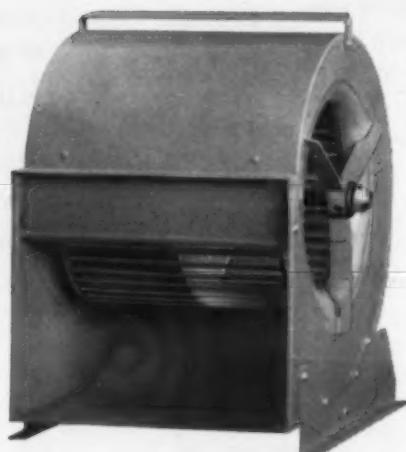
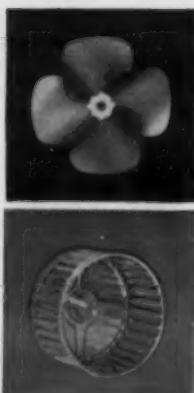
"This certainly proved its worth," Smith observed, "as no noise whatsoever can be detected while the system is in operation."

The system is designed so that any part of the 30-ton cooling capacity can be directed to the classroom area or to the sanctuary as needed. This is done from the control station and thermostat location in the choir loft through use of motorized dampers.

Smith also pointed out that it was necessary to install a complete new four wire power entrance to take care of the new air conditioning as well as the existing light load.

The electrical contractor on the job was Ace Electric Co.

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For more information about products advertised on this page use Information Center, page 29.

Domestic Freezer Sales In '56 Split 51-49% Between Chests, Uprights

NEW YORK CITY—Sales of domestic food freezers for 1956 were about evenly divided between chest and upright types, the National Electrical Manufacturers Association reported recently.

NEMA's statistical department found that 51.3% of total freezer sales last year were chests and 48.7% were uprights, the association announced.

It presented the following breakdown of percentage of refrigerator and freezer sales in each size group compared to total sales:

Electric Household Refrigerators	
7 cu. ft. and under	3.0
8 cu. ft.	18.9
9 cu. ft.	4.5
10 cu. ft.	18.4
11 cu. ft.	18.5
12 cu. ft.	24.1
13 cu. ft. and over	12.1
TOTAL	100.0

Electric Farm and Home Freezers	
8 cu. ft. and under	4.1
9 - 14 cu. ft.	37.3
15 - 17 cu. ft.	27.6
18 - 19 cu. ft.	16.5
20 cu. ft. and over	14.5
TOTAL	100.0

Distributor's Specialty Aids Dealers Put Across Plan for 'Better Living'

ATLANTA—A specialty operation has been set up here by the Deep South Supply Co. to assist retailers in selling and operating the "Amana freezer-food plan."

Deep South, local Amana distributor headed by Roscoe Walker, has a full-time freezer-food wholesale planning department with a manager in charge, it was explained. The wholesale specialist works with dealers in putting across the Amana freezer-foods "better living plan." In addition, he assists in training retail salesmen of Deep South who sell the plan to customers for retail dealers.

Area dealers participating in the plan are American Service Co., Good Housekeeping Shop of Forrest Park, and Johnston's Food Products, Inc., the company explained.

Stores have Amana displays, but Deep South feels the actual selling is a specialty job for salesmen trained in selling freezer-foods. So the distributor supplies retail salesmen to work dealers' territories, it was pointed out.

Financing foods along with the freezer is said to be a strong talking point in the plan. Customers are encouraged to continue buying their frozen foods on the instalment plan even after the freezer is paid for, it was noted.

New Gibson Upright Features 'Freez-Flo'

GREENVILLE, Mich.—An upright freezer of 10.5 cu. ft. capacity to sell for less than \$250 was recently introduced by Gibson Refrigerator Co., Div. of Hupp Corp.

The freezer features a new type cooling plate, incorporated in a system called "Freez-Flo." According to the company, this is the first time the new system has been used. It is claimed there's a continuous cooling surface from top to bottom of the unit.

The company plans to offer the unit, model GUF-11, with the matching G-100C refrigerator as the "Sweetheart Pair," for under \$500.

Two new chest type freezers also added to the line: model CF-17C with 16.22 cu. ft. gross capacity, and model CF-21C with 21.47-cu. ft. capacity.

Illinois Would Regulate Tot Survives Dark Hour In Home Freezer Frozen Food Plan Firms By Bear-Like Hibernation at Zero Degrees

SPRINGFIELD, Ill.—A bill recently introduced in the Illinois Legislature would regulate firms that sell frozen foods and meats to consumer for storing in home freezers.

If passed, the bill would require the firms to wrap the products properly, including on the wrapping the date of freezing and the name and address of the distributor.

It would provide that no such products would be offered to the public that had not been subjected to temperatures below 10° for at least 48 hours.

The bill stems from many complaints of inferior grades of meat and poultry sold under so-called "food plans."

Jurisdiction over its enforcement would be placed with the Illinois Dept. of Agriculture, it was added.

GARDEN GROVE, Calif.—doctor said. "The boy would have died—he missed death by an animal," a five-year-old boy minutes—if his mother hadn't survived being trapped for nearly an hour in a locked home freezer.

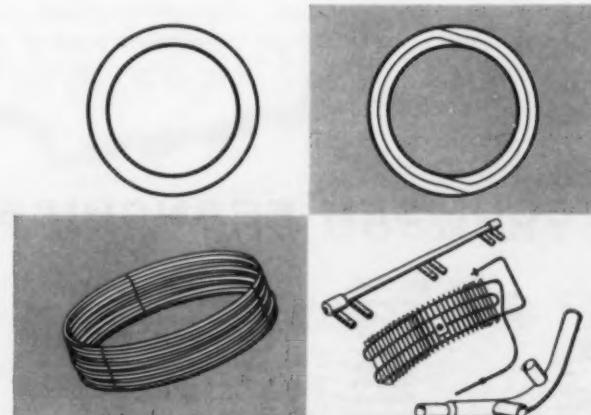
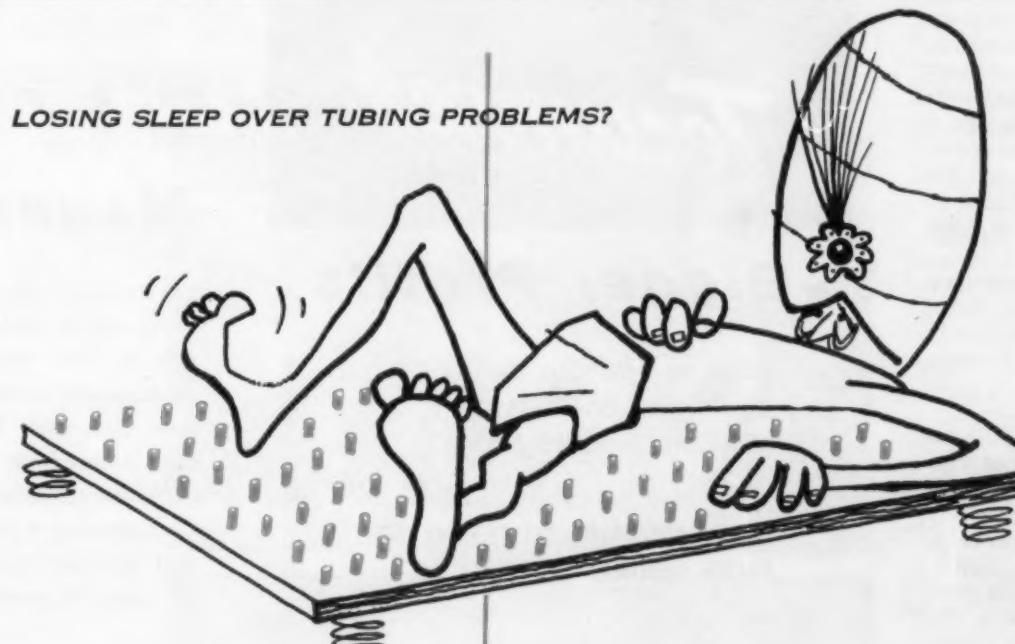
Rescued minutes before death by his mother was little Theo De Hoog. He had climbed in and locked himself in the chest-type freezer.

Dr. Walter C. Ralton said "This was the most interesting case I've ever handled. Hibernation saved the boy's life." The physician administered treatment for frostbite to the feet and hands of tiny Theo.

Dr. Ralton said the zero temperature inside the freezer lowered Theo's metabolism so fast that he went to sleep before he could struggle much.

"This conserved the oxygen sleeping," she further disclosed.

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Air-Cooled Condensers Savings--

(Continued from preceding page) superintendent explains, "is to hold the machine room as close to 70° F. as possible the year around. By holding the room at 70° F. the head pressures of the machines are held at 90 lbs."

The obvious experiments of trying to operate (a) without individual condenser fans, or (b) without blowers, depending on the condenser fans to ventilate the machine room, have both been tried and proved unsuccessful, he reveals.

Assuming the blowers are numbered 1 through 5 (left to right), blowers 2 and 4 are cut in by their thermostat when the machine room temperature rises to 75° F. On a continued rise in temperature, blower No. 3, in the middle, cuts in at 80°, and blowers 1 and 5 both cut in at 85° F.

"What we're aiming at," the

eliminating the individual condenser fans (they were simply turned off by switches provided for this purpose in one installation) resulted in a boost of compressor running time from the previous 10 to 12 hours to 16 hours.

"The individual fans evidently get air through the condenser at the right velocity," he comments. "And the condenser pro-

peller fans just don't work against the static pressure involved in ventilating the machine room and 'attic' space."

Air system devised for the Milwaukee market involves three modulating dampers to control the circulation of air to the machine room. Two dampers are in the outside back wall of the building, one serving as the fresh air intake, the other as the discharge. Third damper controls the by-pass.

Dampers for this market are 2 ft. high by 16 ft. long. The outside dampers are located about 13 ft. above alley level to minimize intake of dust.

Operation of Dampers

As can be noted in the accompanying diagram, two large ducts measuring about 2 ft. by 20 ft. run from the fresh air intake and discharge dampers to the machine room. The by-pass damper is installed between the fresh air and discharge ducts.

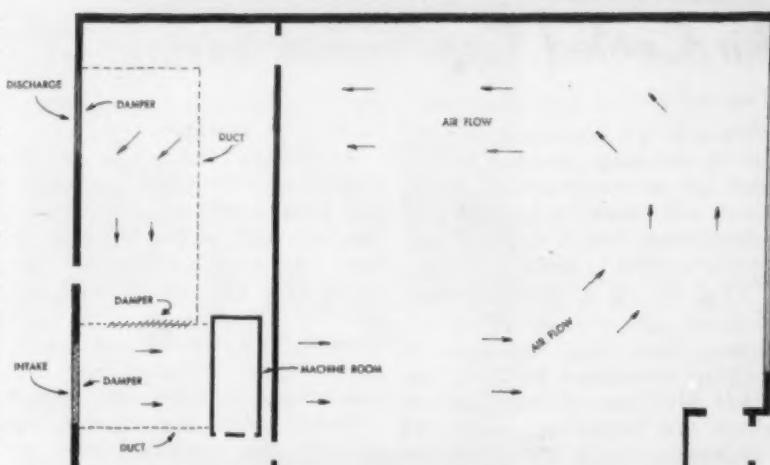


FIG. 1 is plan of supermarket with air-cooled condensers in machine room with blowers and modulating dampers to circulate condenser air above ceiling to cut cooling load in summer, heating load in winter. Arrows show air flow during winter when outside air intake and discharge dampers are closed; permitting air to recirculate.

Operation of the dampers, whether the intake and discharge dampers are controlled by a modulating electronic thermostat in the machine room, is as follows:

Normally in hot summer

which are controlled by a modulating electronic thermostat in the machine room, is as follows:

Normally in hot summer

which are controlled by a modulating electronic thermostat in the machine room, is as follows:

Normally in hot summer

In cold winter weather the intake and discharge dampers normally are fully closed and the by-pass damper fully open. With this arrangement the air is continually recirculated from the machine room through the attic space and back to the machine room.

Electronic thermostat for the dampers is so set that when the temperature in the machine room falls to about 68° F., both outside dampers start to close and the by-pass damper starts to open.

The question of savings obtainable with this method of using air-cooled equipment can be approached from several angles. The first might be the obvious savings on water. And water bills.

Figures Compared

As a basis of comparison, he cites figures of another market in the chain—in Sheboygan, Wis.—a 11,200-sq. ft. "super." All the refrigeration in this store is water cooled.

Actual water bills for this store have amounted to \$83.71, \$88, and \$147 for the last three quarters of record.

"There is no sewer tax in Sheboygan," he also points out. "In some localities this amounts to 100% of the water bill. We have a store the same size in another city where conditions are about the same as in Sheboygan. Combined water bill and sewer tax for this other store totaled \$984 last year. These figures are actually modest as compared to many areas with extremely high water rates."

Although the superintendent has no definite figures to compare power consumption of air and water-cooled equipment, he has checked running time and found air-cooled units running 10 to 12 hours out of 24 when the outdoor mean temperature was 77° F.

As for first cost, air-cooled systems generally figure 5% to 7% more than water-cooled jobs with tower. This question, however, seems rapidly becoming an academic one for this individual.

(Concluded on next page)

WHOLESALE PROGRAM



This new warehousing facility, located in Marion, Ohio, constitutes 30,000 square feet of storage space. Acquired exclusively to facilitate handling of wholesaler orders, this central warehouse maintains a constant inventory of compressors and highsides based on 15-day nationwide usage figures. Orders will be processed and shipments made within 24 hours on single compressor emergency replacements, and within a maximum of 2 to 6 weeks for normal truckload or carload orders. This facility is another step in Tecumseh's program of maintaining better service to our customers.

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Machine Room

Discharge

duct

Air-Cooled Condensers Savings--

(Concluded from preceding page)

With him it's no longer a matter of deciding whether to install air or water-cooled equipment but chiefly a question of determining which type of air-cooled system is best.

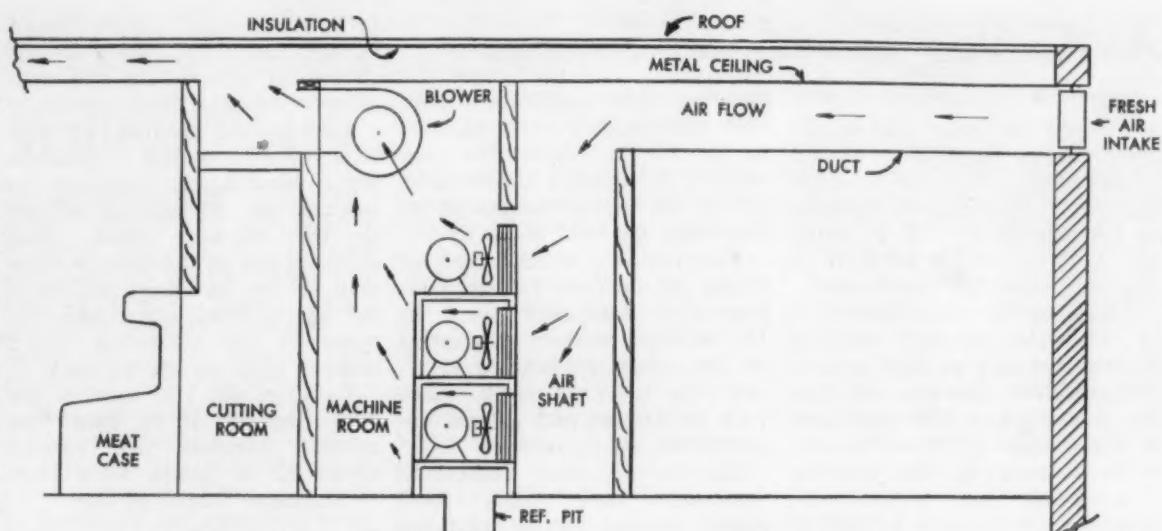
(To aid in a company-wide decision on one or more optional "best way" methods of making air-cooled installations, other divisions of this national chain are installing new model condensing units with oversize air-cooled condensers in a plenum room with direct exposure through thermostatically controlled louvers to the outdoors.

(This method will use the heat from the condensers to help heat the stockroom area with its loading doors in winter time and to circulate air having about 37 tons of refrigeration cost \$4,985 while a

area to reduce the temperature buildup in summer.

(Although this type of installation will result in longer and more costly copper runs to the rear wall of the building, it will, however, eliminate air ducts that are required for an interior compressor. This will allow substitution of low horsepower-high capacity fans for centrifugal blowers that would require more horsepower to achieve the same capacity in the duct system, indicates the head of the planning department of the national chain.)

Cost figures developed by the Milwaukee superintendent are interesting. For example, one installation involving two large remote condensers (located inside the building) for a market



similar job employing individual condensers on rack plus five blowers and ductwork cost \$4,480.

The costs are broken down for a 13-machine installation as follows:

2 remote condensers	\$2,300
13 oil separators	446
Steel for condenser racks	67
Copper tubing, fittings	920
Labor	1,252
Total	\$4,985

He figures the cost of the blower system for a 15-machine installation as:

5 blowers	\$2,400
3 modulating damper motors	300
1 damper	100
(Building owner supplies 2 dampers @ \$100 each.)	
Ductwork	800
Wiring	100
Condensers and fans	780
Total	\$4,480

On saving with the "blower" type installation results from the elimination of oil separators which this superintendent finds necessary when remote condensers are employed. With individual condensers right at the machines on the racks, oil separators aren't needed, he says.

Blower System Cost

Noted in the "blower" system breakdown of costs is the fact that two of the three dampers required for this type of job are supplied by the owner of the building.

The claim that circulating warm air from the air-cooled condensers above the store ceiling during winter reduces the fuel bill is backed up by comparative figures from two markets—the previously cited "super" with water-cooled equipment in Sheboygan, and a slightly larger (11,900 sq. ft. versus 11,200 sq. ft.) market in Appleton, Wis., using air-cooled equipment.

Gas heating bills for the Sheboygan market during the winter of 1955-56 totaled \$1,224.56 while the total in the same period for the Appleton store was \$609.95, according to the company's records.

Because these two markets are only 50 miles apart, there is probably little if any difference in the severity of winter weather, so there is no question in the superintendent's mind that the 50% cut in heating costs is due to circulating air from the condensers above the ceiling.

A month-by-month analysis of these gas heating bills shows:

	Appleton market	Sheboygan market
Sept.	\$...	\$ 21.93
Oct.	23.27	90.93
Nov.	47.77	189.18
Dec.-Jan.	320.69	537.33
Feb.	115.84	178.53
March	72.00	179.13
April	30.38	127.53
		\$609.95 \$1,224.56

These possible savings of \$50 a month average in fuel costs alone combined with savings of water costs plus the reduced air conditioning load obtained by using air-cooled equipment and circulating condenser air above the ceiling are of definite interest to a supermarket, which operates on extremely narrow profit margins.

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- Sales Training—complete schooling from "prospect getting" to "order closing."
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- National and Local Advertising—biggest campaign in Frigidaire history to make prospect preference for Frigidaire even greater!

PLUS THESE BIG SALES AND SERVICE ADVANTAGES

The key to your profits is salespower. And Frigidaire has it—in products, training and promotion! That's why it's easier to sell Frigidaire—a name your prospects know and trust! Products are easier to install because they're complete units—prewired to sealed refrigerating systems to cut installation time, give a better job, fewer callbacks. Manpower! Frigidaire has it, too. Their team is experienced and close by to help you sell and service. Want to know more? Then... WRITE—Commercial Sales Manager, FRIGIDAIRE DIVISION, GMC, Dayton 1, Ohio.

GO FRIGIDAIRE



Tyler-Ketcham System Lets Store Operator Choose Colors 'Effectively'

NILES, Mich.—Designed to help store operators use color effectively is the "Tyler-Store Plan Kit No. 1" announced by Tyler Refrigeration Corp. here.

There is "no need to guess" what color is best for store interiors, Tyler says. The new Tyler-Ketcham "Color Compatibility System" simplifies choosing and placing "exactly the right colors."

The kit includes new tools for preparing fast complete professional looking interior modernization layout visualization and complete data on the Tyler-Ketcham Color Compatibility System, it was further pointed out.

This system is claimed to give the user an "easy-to-follow" plan for profitable use of color.



NEW Tyler-Ketcham "Color Compatibility System" is lithographed in four colors and illustrated with typical examples of store interiors in Tyler-Ketcham colors. It comes complete with color specifications on a poster-size sheet 25 by 26 in. It also includes full color charts arranged in four groups.

What's more, it was said, the which is best for his store, the firm stated.

Developed by Tyler in consultation with Howard Ketcham of New York City, the system helps the store operator avoid costly mistakes, the company explained.

Kit comes complete with floor layout sheets and detachable, adhesive-backed scale replicas of the full Tyler line of self-service refrigerated equipment and shelving. It is available for \$1 each postpaid from Tyler Store Planning Dept., Niles, Mich.

SIX NEW refreshment series with its standard water coolers for 1957 have been introduced by General Electric Co. This is one of the six models and features hot and cold water as well as a small refrigerated compartment that houses two trays of ice.

6 G-E Units Offer Liquid Foods, Hot Beverages In Refreshment Line

BLOOMFIELD, N. J.—General Electric has entered the coffee-break business by introducing six new models of a refreshment series that offer liquid foods in addition to hot beverages.

The company is making the new models available along with its regular water cooler line for 1957. They are designed to help the employer save important coffee-break time during the day, according to C. B. Ramsdell, general manager of the commercial and industrial air conditioning department.

Stating that General Electric was broadening its selection of products this year to meet the fast-growing refreshment market, he said the new models will feature hot and cold water taps plus a small executive type refrigerated compartment for storing cold beverages.

By offering this selection of the new refreshment series, the company "is following its policy of staying abreast of new market demands and at the same time making it possible for its water cooler dealers to reach a greater segment of the buying public with its refreshment series," the announcement said.

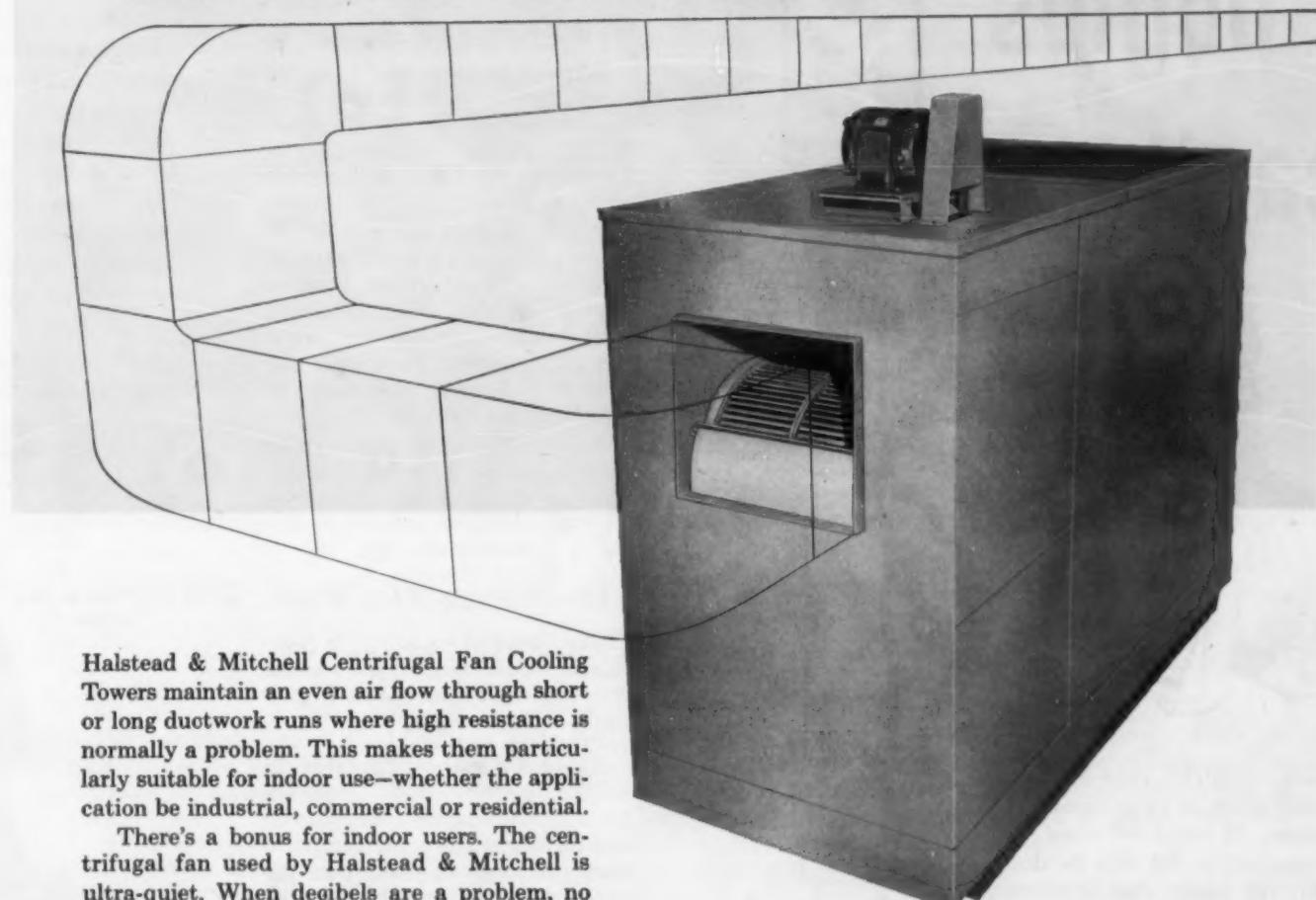
Ramsdell pointed out that the water cooler industry in 1956 increased approximately 50% over the industry's sales for 1954 and he anticipates a further increase of 15% for the industry in 1957.

The new hot and cold refreshment series will include bottle and pressure types with the optional choice of refrigerated compartment.



SO HALSTEAD & MITCHELL ENGINEERS SAID:

CENTRIFUGAL FAN COOLING TOWERS ARE IDEAL FOR LONG DUCT RUNS



Halstead & Mitchell Centrifugal Fan Cooling Towers maintain an even air flow through short or long ductwork runs where high resistance is normally a problem. This makes them particularly suitable for indoor use—whether the application be industrial, commercial or residential.

There's a bonus for indoor users. The centrifugal fan used by Halstead & Mitchell is ultra-quiet. When decibels are a problem, no propeller-type fan can compete.

Like all H&M Cooling Towers, these units conserve up to 97% of cooling water used in air conditioning and refrigeration applications. The 20-Year Guarantee on the wetted deck wood against failure due to rotting or attack by fungus is offered by Halstead & Mitchell exclusively. Cabinet steel is triple-protected for extra long life.

TAKE-APART, TOO!

An especially interesting optional feature of the H&M Centrifugal Fan Cooling Tower is found in the Take-Aparts. These can be dismantled for installation in difficult places by removing a few bolts. Basement or rooftop installation becomes easy. The Take-Apart feature is not standard, but may be ordered as an optional extra.

Centrifugal Fan Cooling Towers are available in 5 through 25 ton sizes, or may be paired when larger capacities are required. Write for full details in Bulletin CF 600. Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

Halstead & Mitchell

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

fast but was able to keep on moving.

"Since then, I've been wondering if there isn't an analogy to this in our executive procedures. Somehow, the modern pace of business seems to be one of high-power starts and stops, with imperative interruptions and exasperating waits. —DR. R. C. HERTZ

Let's Think About This

"We have no time for malice or greed."

"Life is too short for bitter

words, too great for petty things.

"Not only are we a bigger person when we make haste to be kind, when we forget the old grudges and grievances, when we patch up that quarrel and say the kind word, but in that way we get a heart of wisdom, for we begin to realize that when we number our days we find that the time is short and that tomorrow may be too late." —DR. R. C. HERTZ

That's What We Hear

You may be interested by findings brought forth at a conference of European biologists on the subject of old age. The still-unknown process of aging in men apparently does not take place entirely in the cells of the body.

Of the several plausible causes of the aging process in men we like the one wherein it was suggested that it was a "progressive

sive increase in the evolutionary power of natural selection to those whose maximum contribution to the next generation had been made."

This point was developed by scientists who had made studies of aging animals. These specimens, it appears, got bored and died because they had nothing to do.

Old mice, like old men, it was reported, "ceased to look after themselves—however, the introduction of a young female mouse into a cage was enough to change everything."

Things We Never Knew 'Til Now

An azimuthal quantum is a vector numeral which determines angular momentum of an electron in a nucleus orbit.

Hooray for the Difference

Apparently sober and surely straight-faced, the Purdue Research Foundation prefaces a report on psychological studies of raccoons with this paragraph:

"Experimental psychologists seeking subjects for their study of animal behavior more often than not choose white rats and college sophomores. Although these subjects offer the advantages of being readily available they also have this marked disadvantage: because of their wide separation on the evolutionary tree, structure and function are rarely comparable between the two species."

How Crazy Can We Get?

After defeating his wife for the \$7,200 a year job of school superintendent for Albuquerque, N. M., county schools, E. L. Thomson tried to collect his voted pay.

When his first check failed to arrive, he found himself without anyone to sue for it because county schools were abolished years ago in Albuquerque when the city system took over the schools. (A state law kept the office on the ballot.)

Now Thomson's attorneys have petitioned court to appoint a county school board so he can sue it to get his salary for a non-existent job.

Thoughts for This Week

The ideal of equality is hard to reach because everyone wants equality with someone of higher rank.—HENRY REQUE.

There is nothing greater in all the universe than personality and the consequence of its loss is beyond human computation. A highwayman can deprive me of my wealth, but by dint of hard work and frugality, I may in part regain my lost fortune. But a man who, by threats and intimidations, succeeds in reducing my character and personality to a state of spineless insipidity so that I no longer dare or am capable of making vital choices and decisions of my own—that has destroyed a part of my very being. Such a loss is irreparable, for then I shall have lost my own soul.—ERIC EDWIN PAULSON.

There isn't much fun in medicine, but there's a great deal of medicine in fun.

Actually there's only a slight

difference between keeping your chin up and sticking your neck out, but it's worth knowing.—FRANK M. ROBINSON, *Science Digest*.

A successful marriage involves give and take. He gives in and she takes over.

As long as you laugh at your troubles you may be sure that you will never run out of something to laugh at.

"Without a den or place of refuge, a man can achieve neither tranquility or greatness. Jefferson wrote the Declaration of Independence in a quiet rooming house in Philadelphia. The soaring ideas that went into it evolved during hours of reading and contemplation in a secluded library. Had it been TV-guest-family room, the U. S. might still be a colony"—*Changing Times*.

What the future holds, no one knows. But the day may not be

So you, too, have a tough problem? Then, here is a good time to ask yourself: "Is this the same problem I was worrying about this time last year?" If the answer is "No"—congratulations! You have won that battle for peace of mind. The old cerebrum is beginning to celebrate at last!—*Nuggets*.

The most important lesson that failure can teach is that there is something in the human spirit which is strengthened by disasters large and small. The greatest humans are those who, despite the most bitter setbacks, nevertheless keep right on going—surprising even themselves by their powers of perseverance.

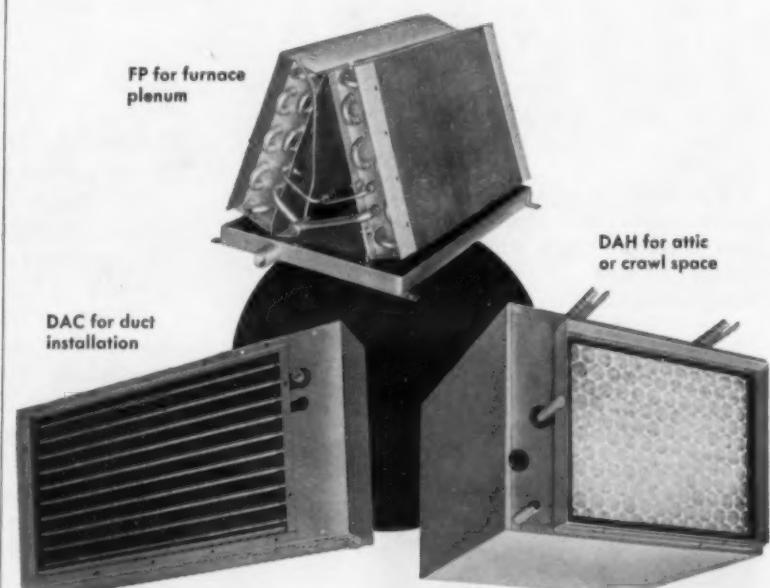
—MARGARET BLAIR JOHNSTONE.

Get YOUR SHARE of the 2 to 5 ton jobs with LARKIN AIR CONDITIONERS

Millions of homes and small buildings are prospects for complete air conditioning systems. And Larkin makes it possible for any dealer or contractor to enjoy a share of this profitable market in the 2, 3, and 5 ton range.

Three types of Larkin units are available: The DAC for installation in the duct of forced air systems; the FP for installation in the plenum of vertical flow furnaces; and the DAH, complete with centrifugal fan, motor, and filters, for installation in attic or crawl space. In all cases, dealers can use compressors of their own choice and locate them for maximum accessibility and minimum noise. Larkin Zephyron air cooled condensers of matching capacities are ideal companions for these compact, highly efficient, Larkin air conditioning units.

Get the facts from your wholesaler, or write direct for complete details in Bulletin 1054.



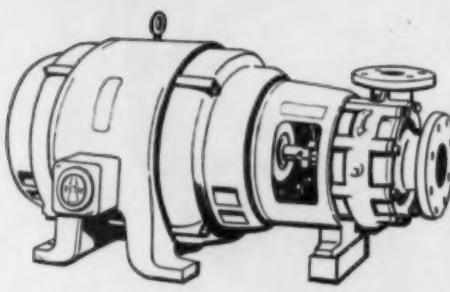
- 2, 3, 5-ton capacities
- Larkin cross-fin coil, UL approved
- Evaporator equipped with pressure-type distributor and external equalizer connection
- Mastic coated drain pan
- Pre-punched holes



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pumps
can't
grow...



Unfortunately, your old pumps can't grow as your business grows. If you need more pumping, it can only be done through bigger pumps or more pumps.

The Fairbanks-Morse line provides the right pump for every industrial application—air conditioning, refrigeration, heating, transfer, booster service, casting washers, fire protection, coolant circulation and, of course, just plain industrial water supply.

Call your Fairbanks-Morse Field Engineer today, or write Fairbanks, Morse & Co., Dept. ACR-5-6, 600 So. Michigan Avenue, Chicago 5, Illinois.

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a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

Offers 6 Refrigeration Service Notes, 5 Safety Precautions to Heating Men

E. LANSING, Mich.—A number of general refrigeration service pointers and safety precautions were given to heating contractors interested in air conditioning who attended a forced warm air conference at Michigan State university.

Don Renwick, association professor of mechanical engineering at MSU, explained the refrigeration cycle to the heating dealers and then added these service pointers and safety precautions.

He warned that these were generalizations and that they should rely on manufacturers' manuals for details.

GENERALIZATIONS

- Exercise extreme caution to avoid dirt, moisture, metal chips, solder, or solder flux getting inside the system during assembly, charging, or servicing the system whenever refrigerant lines must be disconnected.

- Use only the oil grade recommended by the manufacturer. Do not mix oils. A clear white oil is usually best. Discolored oil indicates corrosion or contamination.

Avoid air and moisture contact oil during handling or during storage. Check compressor oil level several times during the first month's operation, especially for remote installations.

- Evacuate system thoroughly with good vacuum pump, preferably, before charging. Break vacuum with refrigerant vapor and evaporate again. Charge refrigerant vapor (not liquid) into low side. Weigh in the correct amount which the manufacturer recommends.

- Leak test the unit carefully. Time and patience here will pay off in the long run. Never fuel the detector torch in an atmosphere containing refrigerant. If you do, the flame will always show green—indicating refrigerant in the air.

- Check all controls for correct action.

- In pumping down a unit with a silica gel dehydrator, do not pump the dehydrator out too fast. If you do the moisture will freeze in the silica gel crystals and break them into a fine powder. This destroys their moisture holding ability. Give the dryer time to heat and keep above 32° F.

BASIC PRECAUTIONS

Basic safety precautions recommended by Prof. Renwick were:

- All refrigerants can damage the eyes by freezing—a very painful condition often affecting the eyesight if suddenly blown into the eyes in large quantities. Hence, do not tighten or loosen pipe lines or gasketed cover plates without first removing the refrigerant contained therein.

- Never fill any refrigerant drum or container or part of a system more than 80% full when stop valves are shut. A little warming of full containers with valves shut can create terrific bursting pressures sufficient to kill a person.

- Disconnect the electric power supply before working

on a refrigeration system. Shut off the main switch or pull the fuses so the unit cannot accidentally start, causing a shock or broken or cut hands from moving fan blades or V-belts.

- The "Freons," while classed as non-toxic, can, upon continuous breathing, create an unhealthy anemic condition of the blood, similar to that produced by carbon tetrachloride, though not as severe.

- The vapors of "Freons" going through a flame break down into phosgene. So do not breathe the fumes during leak tests with a torch. Do not work near a soldering or blow torch or appliance flame when free "Freon" vapor exists, unless the space is well ventilated.

In the course of his talk, Prof.

Renwick also advised dealers who make remote air-cooled installations to place the condensing unit so that there is at least 18 in. of open space on the suction side and 3 ft. on the discharge side. This much free area is needed to get proper cooling of the condenser, he said.

He suggested that when a water-cooled condenser is used without a cooling tower, the water control valve should be adjusted for a flow of 1 to 3 g.p.m. per ton of refrigeration or a 10 to 30° F. temperature rise for economical operation. Also check the water valve to see that it shuts off tight on the off-cycle, he added.

Appliance Dealer Dies

BUFFALO—Joseph W. Budziszewski, Sr., 62, owner of the Elk Appliance Co., 1186 Broadway, died recently in Roswell Park Memorial Institute.

Contractor's Service Rate Should Be 'At Least Double' Serviceman's Pay

MIAMI BEACH, Fla.—The hour, you have \$1 left to re-capture your overhead and other operating costs, including your profit, and any other benefits you may pay."

Sixty to 70% efficiency for labor is not as low as it might seem, Deitl commented.

"We have made surveys in our area and that has proved to be basically true. The high was 70%.

Even with such a man, he explained, when you take off vacations and paid holidays—which represents close to 10%—it automatically brings him down to 70%.

If you are carrying a crew on a year-round basis, lost time and premium time on warranty jobs, which cannot be recaptured, automatically bring down that percentage, he added.



"VIRGINIA's" family of water treatment chemicals for safe, efficient equipment maintenance

"Virginia's" complete line of water treatment chemicals are all specifically designed for the uses for which they are indicated in the air conditioning, refrigeration and heating industries. All were developed under field test methods which established their efficiency for practical use in protecting valuable equipment.

WATER TREATMENT and SCALE INHIBITOR

"Virginia" Water Treatment & Scale Inhibitor is a special blend of sparingly soluble glassy polyphosphates which hold scale-forming solids in suspension or solution, greatly reducing scale buildup on metal surfaces. The slow, controlled solubility of the crystals supplies a continuous, effective inhibiting dosage—no feeder devices are required.

SCALE REMOVERS (Solid and Liquid)

When scale has already accumulated, "Virginia" Scale Removers are safe, quick and economical to use. Avail-

able in dry granular form for maximum safety to equipment, and for use in localities where water hardness is less than 200 parts per million; also in liquid form for heavier incrustations and where water hardness is greater than 200 parts per million.

NEW ALGAEKIDES

"Virginia" Algae-Cide No. 1 is an organic copper compound which releases an exceptionally high copper ion concentration. It is more effective and more economical than ordinary copper salts. "Virginia" Algae-Cide No. 2 is a blend of two different water-soluble organic compounds for use in eliminating slime and mixed infestations of slime and algae. It is also recommended for killing copper resistant algae.

ICE MACHINE CLEANER

"Virginia" Ice Machine Cleaner rapidly and effectively removes scale

and slime from ice machines. It eliminates the cause of objectionable odors and prevents formation of cloudy ice. It is easy, safe and economical to use.

Write for free literature about all of these products

Refrigeration Division
139 Jefferson St.
VIRGINIA SMELTING COMPANY
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ESOTOO • KINETIC CHEMICAL'S "FREON" REFRIGERANTS • V-METH-L CAN-O-GAS • PERMAGUM • PRESITITE TAPE • KWIKWRAP • SUNISO REFRIGERATION OILS • WATER TREATMENT CHEMICALS

Available in Canada and many other countries

Residential Air Conditioning

Air Conditioning & Refrigeration News, May 6, 1957

Detroit Heating Men Say 'Restricted License' Doesn't Allow Installation Of Remote Equipment Which They Sell

DETROIT — Anger over restrictions imposed by the Detroit refrigeration code was expressed by some heating contractors here recently.

What good is Detroit's "restricted license," they asked Roy Burns of the Detroit Department of Buildings and Safety Engineering, if it won't permit them to install what they sell?

The restricted license limits holders to installing packaged equipment only in sizes not over 7½ hp. It does not permit them to hook up remote units or do any servicing.

They argued that 90% of their residential air conditioning sales were in remote units. For this, they are forced to hire a refrigeration man to make the installation.

If that man does a sloppy job and fails to evacuate the system, they are in trouble, they said. If the compressor goes bad within a year, the factory won't accept it because it wasn't evacuated properly. The refrigeration man who did the work carries no responsibility, and they are left holding the bag with an unhappy customer.

The complaining heating men asserted that they were capable enough to install and service air conditioning systems of up to 40 tons outside the limits of the city of Detroit.

But, they were unable to qualify for a full-fledged "Class B" refrigeration license. Interested only in air conditioning, they had no knowledge—or need for any—on ammonia refriger-



ants, walk-in boxes, and such like. They need to know this in order to qualify for Detroit's "Class B" license, they felt.

Burns admitted that there is no category of license that would give them what they desired.

"Why not?" they asked.

No one has asked for any changes in the refrigeration ordinance since the restricted license was established about a year ago, Burns replied.

"If you are unhappy with the ordinance as it is, why don't

you get your warm air heating association to draw up some changes?" he asked.

Burns said that 24 heating contractors were currently awaiting refrigeration license examinations and others have already qualified for Class B refrigeration licenses under the new rules.

50th Anniversary

COLUMBUS, Ohio — Palmer-Donavin Mfg. Co., regional distributor of building materials, heating, air conditioning, and plumbing equipment, along with a minor role as maker of specialty sheet metal products, is celebrating its 50th anniversary.

Coleman air conditioning DISTRIBUTORS

ARKANSAS—Gunn Distr. Co., Inc.
1801 E. 22nd St., Little Rock

CALIFORNIA—The Coleman Co., Inc.
6480 Flotilla St., Los Angeles
The Coleman Co., Inc.
250 Sylvester St., So. San Francisco

COLORADO—B. K. Sweeney Co., 1601 23 St., Denver

CONNECTICUT—Roskin Distr., Inc.
275 Park Ave., East Hartford

FLORIDA—Eckles Distributors
1701 Industrial Blvd., Jacksonville
J. D. Johnson Co., 16 W. Gregory, Pensacola
I. W. Phillips & Co., P. O. Box 400, Tampa

ILLINOIS—The Coleman Co., Inc.
2201 So. Darst St., Peoria, Ill.

INDIANA—Great Northern Distr., Inc.
1117 Maumee, Fort Wayne
Great Northern Distr., Inc.
209 College St., South Bend

IOWA—Midwest-Timmermann Co.
114-116 Western Ave., Davenport
Sidles Co., 8 Seventh St., Des Moines

KANSAS—Coleman Heating & Air Conditioning Co.
P. O. Box 2060, Wichita

KENTUCKY—Valley Distr. Co., 912 Baxter, Louisville

LOUISIANA—Walther Bros. Co., Inc.
1722 Poydras at Willow St., New Orleans

MAINE—Nelson & Small, Inc., 68-78 Union, Portland

MASSACHUSETTS—Bigelow & Dowse Co.
2nd Ave. & A St., Needham Heights

MICHIGAN—Semmler Wholesale Supply Co.
5100 St. Jean, Detroit

MINNESOTA—Kelley-How-Thomson Co.
309-349 S. 5th Ave., W., Duluth

MISSOURI—Coleman Htg. & Air Cond. Co.
1219 Union Ave., Kansas City
Hollander & Co., Inc.
3900 W. Pine Blvd., St. Louis
General Wesco Distr. Co.
P. O. Box 271, MPO, Springfield

MONTANA—Marshall-Wells Co., Box 2092, Billings

NEBRASKA—Sidles Co., 7302 Pacific St., Omaha

NEW MEXICO—Albuquerque Lumber Co.
501 N. First St., Albuquerque

NEW YORK—Roskin Bros., Inc.

1827 Broadway, Albany
Lee Distr. Co., 845 Washington St., Buffalo
Jericho Distr., Inc., Route 25, Centereach, L.I.
Say-Ber Distr. Co., Inc.
104 W. Division St., Syracuse

NORTH CAROLINA—Southern Appl., Inc.
P. O. Box 2096, Charlotte

NORTH DAKOTA—Minot Coleman Distr.
Box 969, Minot

OHIO—Miami Valley Distr., 8 N. Keowee, Dayton
Hughes-Peters, Inc., 1128 Sycamore, Cincinnati
Shuler Distr., 2114 Woodland Ave., Cleveland
Hughes-Peters, Inc., 111-17 E. Long, Columbus
The Joseph B. Smith Co., 1945 Franklin, Toledo

OKLAHOMA—Paul W. Davis Co.
825 N. W. 2nd, Oklahoma City

PENNSYLVANIA—The Coleman Co., Inc.
133-43 W. Hunting Park Ave., Philadelphia
L/H Appliance Wholesalers
930 Manchester Ave., Pittsburgh

RHODE ISLAND—Lenz-Knight Co., Inc.
200 Conant St., Pawtucket

SOUTH DAKOTA—L. C. Lippert Co.
504 S. Cliff Ave., Sioux Falls

TENNESSEE—Indoor Comfort Distr.
520 Van St., N. W., Knoxville
Forsyth-Williams, Inc.
34 N. Lauderdale, Memphis

TEXAS—Amarillo Hardware Co.,
600 Grant St., Amarillo
Paul Davis Co., P. O. Box 10102, Dallas
W. G. Walz Co., 500 San Francisco St., El Paso
South Texas Appl. Corp.
641 S. Flores St., San Antonio
Warren Distr. Co., 205 Velasco St., Houston

VIRGINIA—R. F. Trant Distr. Corp., Box 300, Norfolk
WASHINGTON—Western Utilities Supply Co.
P. O. Box 3524, Seattle

WEST VIRGINIA—Van Zandt Supply Co.
1123 Fourth Ave., Huntington

WISCONSIN—Wisc. Heating Distr.
4715 N. 32nd St., Milwaukee

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priced for every house under the sun

More prospects! This year air conditioning can pay off bigger and handsomer than ever before! New low Coleman prices put air conditioning within the reach of virtually every homeowner.

Most versatile cooling line on the market!

Choice of packaged remote systems... or the revolutionary new Polar-Pak waterless self-contained system... available for every size and type heating system... for every budget.

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All-new waterless self-contained system.
the ONLY unit of its kind that ventilates as well as cools! Installs anywhere indoors—or outdoors!

Choice of Remote Systems

New economy AIR COOLED condenser. No plumbing.

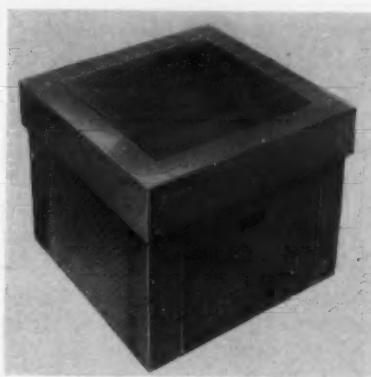
Exclusive "AIR-MIST"

finest condenser money can buy!
Proved the most cooling power at LOWEST operating cost.

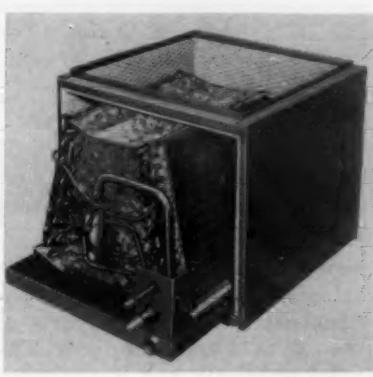
THE COLEMAN COMPANY, INC., WICHITA 1, KANSAS

YOUR COLEMAN AIR CONDITIONING DISTRIBUTOR IS LISTED IN ADJOINING COLUMN... GET IN TOUCH WITH HIM!





AIR-COOLED condensing unit for Philco Corp.'s new split-system air conditioner is available as a 3-hp. or two 5-hp. units.



VERTICAL "A" type evaporator coil in the split-system air conditioner is available as either a 3 or 5-hp. model.

Black To Direct Sales of New Philco 3, 5-Ton Split-System Air Conditioner

PHILADELPHIA — Philco Corp. has announced the addition of a 3 and a 5-ton split system air conditioner in its commercial line.

At the same time, John L. Goldschmeding, Jr., air conditioner sales manager, announced the appointment of James M. Black as sales representative-commercial air conditioning to direct the sales of these new air conditioners.

Black has been with Philco for 10 years on air conditioning service and sales training. While with the Navy during World War II, he was the second man to be named a refrigeration specialist-machinist mate. Black was attached to the Admiral's fleet and saw service in the European and Pacific theaters.

The new split system air conditioners will include evaporator blowers, horizontal coils, and "A" type coils. The 3-ton unit is model AC-3071, single phase, and the 5 ton, model AC-5071, single and three phase. Both models are now in production.

The two systems are adaptable to installation in up-flow and down-flow heaters, installation in attic or crawl space with independent air distribution systems, or installations with the condensing unit located outside a building or home.

The evaporator-blowers can be adapted to commercial installations such as drugstores, food markets, and shopping centers as either free flow or with their own distribution system.

In addition to the two split

Typhoon Names Farr President's Aide

BROOKLYN — Arthur H. Farr, formerly director of application engineering, has been appointed assistant to the president of Typhoon Air Conditioning Co., Div. of Hupp Corp., it was recently announced by Don V. Petrone, president.

A. H. Farr has been appointed to the new post as part of Typhoon's development program. His new assignments will be concerned with sales functioning, engineering, production, purchasing, as well as all other phases of operations.

He attended Case Institute of Technology in Cleveland and graduated in 1940 from the University of Michigan College of engineering.



HERE'S DRAMATIC PROOF THAT WATER-DISPERSED 3M ADHESIVE EC-321 WON'T BURN EVEN WHEN IT IS SPRAYED OVER AN OPEN FLAME!

Now with 3M Adhesive EC-321 you can bond insulation to air-conditioning cabinets swiftly and safely—without spray booths or ventilating hoods. This water-dispersed adhesive won't burn when wet. What's more, EC-321 has exceptionally high heat resistance. It's safe to run metal parts through a paint-baking cycle right after insulation is bonded.

Fast-acting EC-321 grips the insula-

tion immediately—has high wet strength. Production can continue as complete drying proceeds. EC-321 is easy to apply with spray gun, brush or roller. Moisture and vibration of the air-conditioning unit do not affect the bond. EC-321 is excellent for bonding insulation in heating units, too.

SEE WHAT 3M ADHESIVES CAN DO FOR YOU!

Consult 3M Research. Contact your

3M Field Engineer. Or for information and free literature, write on your company letterhead to: 3M Dept. 135, 417 Piquette Ave., Detroit 2, Mich.



MINNESOTA MINING AND MANUFACTURING COMPANY • ADHESIVES AND COATINGS DIVISION

417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • 95 PARK AVE., NEW YORK 16, N.Y. • CANADA: P.O. BOX 787, LONDON, ONT.

For more information about products advertised on this page use Information Center, page 29.



TWO of 14 Air Force weather trucks, equipped with Amana year-round air conditioners are shown here. Between them is the 10 kw. mobile generator which supplies power.

3/4-Hp. Year-Round Units Condition Men, Special Equipment In Weather Trucks

WICHITA, Kan.—Central air conditioner sales during the first two months of this year have soared far ahead of the same period last year in the area served by the Kansas Gas & Electric Co., the utility reports.

Thirteen dealers in southeast Kansas reporting to the utility sold 41 central units in January and February as compared with only six in the opening months of 1956. Of these 28 were sold in February and 13 in January.

Room air conditioner sales,

however, dropped 17.9% below the 1956 level. There were 243 units sold this year as compared with 296 last year, it was pointed out.

Amana 3/4-hp. air conditioners, have been installed in 14 Air Force weather trucks which are in use in diverse weather

AMANA, Iowa—Whatever the conditions throughout the world. Outside weather forecast, the installed at the front of the modern-day plainsmen who roam "Tornado Alley" know that it will be fair and comfortably cool, inside United States Air Force weather trucks, Amana Refrigeration, Inc.

The weather trucks house specialized equipment for observing and recording conditions in the upper atmosphere and on the surface. The trucks, manned by two to four airmen, are used wherever weather service cannot be provided.

Apply this insulation adhesive safely anywhere on the production line!



Selling for Profit—(In Residential Air Conditioning)

How To Use Time Payment Plan as 'Powerful Closer'; Selling Benefits of Years of Comfort and Health

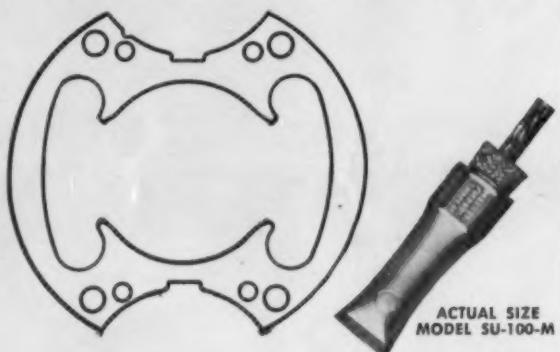
By Frank Klein

The necessity for methods of financing retail paper in the field of retail air conditioning sales was apparent even in 1946. Time Purchase Payment plans were and had been available on practically every other major item of purchase; why we in the industry did not immediately recognize the inevitable and do something about it then, can only be charged to a failure to recognize the opportunity for large scale production and mass selling facing us.

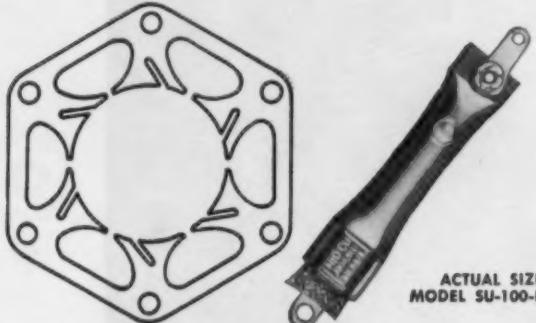
It was as ridiculous in 1947 to think of selling a piece of equipment costing upwards of \$2,500 installed, FOR CASH, as lines of manufacture would it was to expect purchasers of plummet.

MIGHTY MITE PROTECTS MOTORS AGAINST FAILURE REGARDLESS OF *Lamination Shape*

Mighty Mite motor protectors can be furnished as small as $\frac{3}{4}$ " long x $\frac{1}{16}$ " wide for motors rated up to $\frac{1}{3}$ h.p., 115/230 volts. Millions of Mighty Mites used in leading makes of electric motors have proved dependable performance.

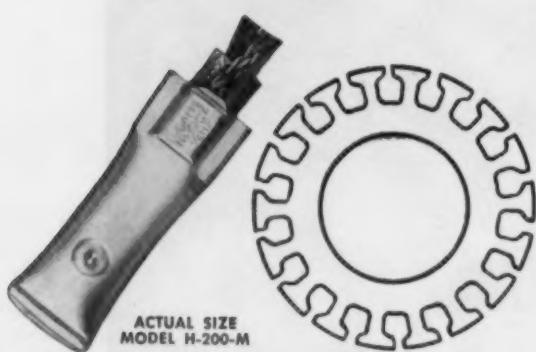


ACTUAL SIZE
MODEL SU-100-M



ACTUAL SIZE
MODEL SU-100-L

Mighty Mite protectors add years of service life to any motor by continuously and automatically eliminating over-heating and charring of insulation, as well as possible burn-out. Mighty Mites are tamper-proof and cannot change their factory-set operating characteristics.



ACTUAL SIZE
MODEL H-200-M

Mighty Mite units are accurately pre-calibrated at the required break temperature up to 200°C . They are supplied in special "ready-to-use" packages, and require no further sorting, adjusting or other handling prior to actual installation on the motor assembly line.

Mighty Mite thermal protectors can be conveniently fitted into practically any stator design. In operation, they will automatically break the circuit to the stator field whenever the motor exceeds a predetermined safe operating temperature. When the temperature returns to normal, the Mighty Mite will automatically reconnect the circuit.

SAMPLES AND ENGINEERING AID AVAILABLE



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MOTOR PROTECTORS
MECHANICAL INDUSTRIES PRODUCTION CO.
928 ASH STREET • PHONE: PORTAGE 2-7674 • AKRON 6, OHIO

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the eighth article in the series which began March 18.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. He has held executive sales positions with a number of air conditioning manufacturers. At present he is a partner in Heideneich, Klein & Associates of Dallas, marketing specialist.

as well as the potential of the form that it will have logical, residential cooling market, in immediate acceptance in order to get your prospect to say, "I'll buy it."

Analyze why your former sales have gone wrong. Why do most people say they cannot afford air conditioning? Isn't it because they are thinking in terms of the total cost? The total cost of the system or installation in relation to the physical discomfort they feel from hot and uncomfortable weather for a short period of time in relation to the entire year? . . . and for just ONE year at that?

Those of us who wish to profit in this market, will find ourselves either at the head of the line or the bottom of the line in sales, on the basis of our ability to offer our product and services through payment plans that make it easier for the consumer to buy.

Top salesmen throughout the country are making their marks via two normal avenues of credit extension:

2 Normal Avenues Of Credit Extension

A. Through occupancy-qualification of premises, for FHA Improvement loans, which are now available immediately on occupancy.

AND

B. Private finance plans underwritten by commercial credit institutions or local banks. These plans now vary in length of time payment from 36 months to five years, with as little as nothing down to 10% of the total purchase price, including installation.

Take for instance the "bell-cow" of residential equipment lines—the 3-ton capacity system—and evaluate its purchase and installation under normal circumstances as

Add-on equipment with its various components; normal changes in thermostat wiring, installation of required 220-volt service; slight but normal sheet metal transition work in the furnace take-off to accommodate the add-on coil, the running of dual lengths of refrigerant piping not exceeding 50 ft. of length in each case; the possible inclusion of either the next size blower motor, or a duct blower-booster; inclusion of an exterior concrete "mounting pad" for the remote air-cooled condensing unit, but with no duct changes or added insulation;—and we are talking about let us say, \$1,000. (Please lower your eyebrows readers, this is being done in competitive markets.) This price is "turn-key."

Therefore, with our turn-key figure of \$1,000 to the consumer, his transaction when financed with private avenues of credit, might look something like the figures in the tables on page 19: Note who makes the "bundle" out of this kind of transaction. This is the reason why financially equipped installation contractors are taking a leaf out of the appliance people's book, by arranging their own bank credit, and carrying their own "paper."

Because we in America, are of a nation in which the word "possession" is synonymous with the phrase "I've got to have it," practically every possession we desire is available to us on a time payment plan of some form or another. For the purpose of our discussion here, we thus must recognize that the homeowner and retail consumer field are so educated.

Thus in assessing the value

which can be developed on a CASH SALE BASIS. It is a market which can and will be developed on a TIME PAYMENT BASIS.

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Let us bear these two types of contracts in mind and analyze a sales approach to the consumer, using these types as ammunition. How do you present either contract in such a

(Continued on next page)

Selling Cooling--

(Continued from preceding page)

cubic foot of space in her home.

Here is an example. Let us say that she has an 8-cu. ft. refrigerator, and the unit when bought cost \$300. To cool 1 cu. ft. therefore, she is paying, less operating cost, \$37.50 per cu. ft.

Parallel this example by using the contract price used above of \$1,075.50 for the 3-ton system. Let us in turn accept the area of the home she sets in as 1,500 sq. ft. with 10-ft. ceilings, thus a cubic area of 15,000 cu. ft. On the cases of these figures therefore it would cost her less than 14 CENTS PER CUBIC FOOT for air conditioning, less operating costs.

If the man of the house can afford to buy an extra package of cigarettes a day—if he can afford to buy his wife a refrigerator . . . why then can't he afford to buy your 3-ton air conditioning system?

Approach 'Price' In Familiar Terms

The point to remember is, that you must approach the subject of PRICE in the consumer field in terms of payment with which your prospect is familiar. NEVER price your equipment as EQUIPMENT alone—it won't perform for your prospect without installation.

NEVER on the other hand break your total price into (1) equipment cost, and (2) installation cost—price them together AS A SYSTEM.

NEVER actually advertise the price of your system on a TOTAL PRICE BASIS; on the other hand price it on an owning and operating cost basis in the few cents per day it calculates out to be. \$29.90 per month and 14 cents per day sound a whale of a lot better than \$1,075.50.

Now what are the financial tools available to us in the field of finance? First in assessing the availability, determine that both the product you handle as well as the manufacturer has an unquestionable background of financial integrity.

Determine that they both are acceptable financial risks to commercial credit organizations and banks, notwithstanding governmental agencies such as VA and FHA.

Basic Views for Loans

Banking sources and lending agencies of the local community type assess their loans for home and business improvements from basic views;

- (1) the integrity and credit history of the borrower, and
- (2) the integrity and business history of the manufacturer and vendor of the products.

Banking credit relationships with local sources is one of the most neglected associations in the air conditioning and refrigeration industry. Why we, as business people doing business in a community, dependent on community association, and further dependent on financial help in conducting our businesses, have not and do not cultivate our local banking connections as we should, stands as a mystery.

No wonder local bankers are gun-shy when air conditioning is mentioned; we are doing little if anything to better our relationships. We have let the op-

EXAMPLE: 36-Month Contract

Installed cost	\$1,000.00
Down payment	100.00
	900.00
Balance to finance, 36 mo. at 6% per annum	\$ 900.00
Add finance charges for 36 payments	13.50 (1½%)
Add interest at 6% per annum	162.00
TOTAL CONTRACT PRICE	1,075.50
36 equal payments to the nearest decimal or	35 payments at \$29.90 ea.
	1 payment at 29.00

EXAMPLE: 5-Year Contract

Installed cost	\$1,000.00
Down payment	100.00
	900.00
Balance to finance, 5 years at 6% per annum	\$ 900.00
Add finance charges for 60 payments	22.80
Add interest at 6% per annum	270.00
TOTAL CONTRACT PRICE	1,192.80
60 equal payments to the nearest decimal or	59 payments at \$19.90 ea.
	1 payment at 18.70

portunists, the fly-by-nighters, lend money his resources and surpluses stagnate. He looks for a profit from the money he lends just like you and I do from the products we sell.

Local bankers are changing their attitudes considerably in the last 12 to 18 months—no thanks to us. This is being brought about by the rapidly changing appearance of air conditioning as a business tool, necessary to commercial enterprise only to that of a consumer—appliance object necessarily a part of modern healthy and efficient living. This attitude change plays definitely in your hands as a dealer contractor.

The financing of retail paper, to a progressive banker and his institution, is the very artery linking him to the community. Money exchanged through commodity, at local level, BENEFITS THE LOCAL LEVEL.

Furthermore, money is the banker's "commodity," he uses it to make a profit. If he doesn't

Why not get together with your banker? Tell him of your approach to the residential market which now involves many of his depositors and customers. Make arrangements with him to handle your retail paper on extended time contracts. Better yet why not establish a line of credit with him where you can have access to a revolving number of "X" dollars—and handle your own paper and make this profit too?

It is my firm belief and opinion, that the local banker in your community is the best friend you have. Furthermore, he has the finest aggregation of YOUR friends in his bank—THOSE EVER FAITHFUL GREEN-BACKS!

(To Be Continued)



Reverse Air Discharge in Five Minutes With New Mueller Climatrol Horizontal

"Dualock†" Eliminates Re-Assembly in Tight Installation Spots

Your biggest break yet in installing horizontal heating! Never again must you switch controls to reverse air discharge. With the Mueller Climatrol 166-167, blower attaches to either right or left side

† Trademark

in scant minutes! Reason: unique Tite-wedge† clamp that grips blower and unit in an air-tight assembly.

Sell it for attics, crawl spaces, basements, utility rooms. Sell it where commercial jobs call for heating one or a few rooms. In fact, for any demand — 80 to 140 thousand Btu — its easy-going installation leaves you a bigger piece of profit.

Two-Section Construction Makes Handling a Breeze!

Another installation extra you get only with the Mueller Climatrol Type 166-167 horizontal. Because the unit is made in two easier-to-handle sections, you save the strain of one bulky back-breaker. Heaviest section weighs 200 pounds.

Compact, too — will slip easily through a scuttle hole as small as 30" x 30".

That's not all — how about these other terrific time-savers:

- EACH SECTION COMPLETELY ASSEMBLED AND PRE-WIRED. Just connect gas, blower and thermostat wire — that's it!
- BUILT-ON HANGER ATTACHMENTS. All set for suspended installation.

And there's a lot more good news for both you and your customers.



Your man from Mueller Climatrol can give you the full story — including dimensions, price and capacity information. Or if you prefer, write direct to ...

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They'll Do It Every Time

by
Jimmy
Hatlo



Better Statistics Will Insure Profits

(Concluded from Page 1)

they can't expand, either; nor can they pay for research that is needed so badly in our industry.

Bruce Henderson, Westinghouse vice president, states the case ably in the following letter.

Westinghouse Electric Corp.
Air Conditioning Div.
Staunton, Va.

Dear George:

I can't remember when I have ever written a letter to an editor before. I can assure you I have never before forwarded a speech to an editor which was made by the president of a competitor. However, I am attaching an address by Ralph J. Cordiner, president of General Electric, which he gave before a National Electrical Manufacturers Association meeting in Atlantic City last fall. The theme of this talk is that price levels in the electrical industry have not gone up fast enough to support the required growth of a healthy industry.

As I read this talk I couldn't help comparing the electrical industry with the air conditioning industry which, in a sense, is really part of it. Everything that was said is trebled in spades for air conditioning. It is even growing faster than the electrical industry. However, generally speaking, profit margins are lower than those of the electrical industry. Obviously the industry is not creating the funds required for its growth from its own earnings. Carrier is probably one of the most profitable companies in the air conditioning industry, and they pointed out in their annual report that financing of growth from earnings was not a reasonable expectation in the air conditioning industry.

I found it interesting to compare a study of our air conditioning industry made in 1949 against the situation today. Standard commercial water-cooled units sold for more than they sell for now. The units we sell today are infinitely quieter and better looking, and in every way superior. We have had steady increases in our material and labor costs at a rate of 5-8% per year.

Like our competition we have invested many millions of dollars in new and improved plant facilities and engineering in order to make it possible to manufacture this product at a lower cost, even though there has been a steady increase in the cost of components that go into the product. If

I can believe the evidence I hear and see the manufacturers of air conditioning generally have not found it to be a particularly profitable business. Certainly the 25-30% growth in packaged air conditioning in the last few years has not been financed out of earnings. I think it only legitimate to ask the question: How long will it be before price levels in the air conditioning industry are adequate to support a healthy growth of the industry as a self-supporting business?

Cordiner points out three reasons why he believes unsound pricing to be in existence. These are:

1. Inaccurate information from the field.
2. Inadequate and inaccurate cost information.
3. Inadequate information as to the margin required to maintain progress.

George, a great many people have been attracted to this business in the last five years by its obviously tremendous growth potential. Many of these relatively newcomers are particularly responsible for the decay of adequate price levels. A service could be rendered the industry by developing an awareness of the amount of capital generation that will be required.

Today Grade A securities will bring returns of 4% to 5%, but working capital tied up in receivables, inventories, work-in-process should earn as much. The money tied up in brick and mortar and machinery should earn more because the risks are even greater. From what I can detect there is very little evidence that the air conditioning industry is averaging anything like this.

Best regards,

BRUCE.

To Bruce Henderson one could reply that the matter of not being able to finance future growth from present earnings is our industry's fault only in part. Two other factors, which presently seem beyond our control, are even more damaging:

(1) "Built-in" creeping inflation fostered by big unions, which regularly jack up labor charges beyond productivity-increase rates, especially in such basic industries as steel and transportation. (Transportation? Well, there's the Teamster's Union....)

(2) Excessive taxes, which take more than half of corporation earnings. Until we citizens can persuade our government to cut its wasteful spending and its ruinous taxation, businessmen won't be able to put aside enough dollars to build the additional plant

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F. M. COCKRELL, Founder

'The Conscience of the Industry'

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and research facilities our economy requires so urgently.

As to price competition from newcomers, the air conditioning industry can blame itself. Manufacturers steadily have refused to supply adequate STATISTICS on this business. What's that go to do with the prices of packaged air conditioners? Simply this:

The whole country has a false idea about the size of the air conditioning industry. People imagine it to be much bigger than it really is. Also they have false notions about the money which they presume is being made in it (rather, NOT being made in it). As a result too many new firms plunge into the stream—hoping it will carry them to quick riches. Many of them shouldn't have taken the dive.

The water is mighty cold . . . a shock. So the plungers get panicky. Volume they had so fondly expected doesn't materialize. In desperation they cut prices. Eventually they get out of the business. In the meantime, though, they've made it tough on everyone. (And then there are those prior competitors who cut prices in the hope of discouraging newcomers!)

Our point is this: *If adequate statistical information on air conditioning were published regularly most of these eager beavers would be discouraged from entering our industry.*

As for the three points quoted from that speech by G-E President Ralph Cordiner, they boil down to recklessness induced by *inadequate or inaccurate information*. And that states the case precisely for full reporting of industry statistics.

If production, sales, and current inventory figures on every air conditioning product could be published quarterly—or even monthly, as the automotive industry does—relatively few people who have no business getting into this business would dart into the fray. (P.S.: A genuine "old-timer" will catch the significance of those last four words.)

One cannot finger any individual or any single corporation to blame for this situation. We CAN blame the industry as a whole. Certainly AIR CONDITIONING & REFRIGERATION NEWS has been deplored the failure to give out with statistics—and pointing out the consequences—for many years.

Although the ARI has made progress in the direction of gathering statistics from individual members, the publishable results have been too little and too late, so far, to remedy this situation.

NOW that EVERYBODY is concerned about minuscule profit margins, can't we do something about collecting and disseminating statistical truths? Let's get the air conditioning business on a stable and sensible basis!

they're here!!

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are out of
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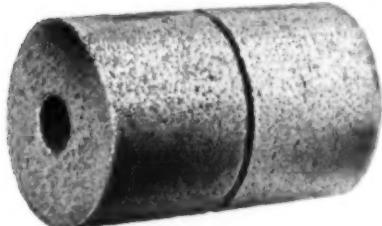
IT'S NEW... ALL THE WAY

Drymaster

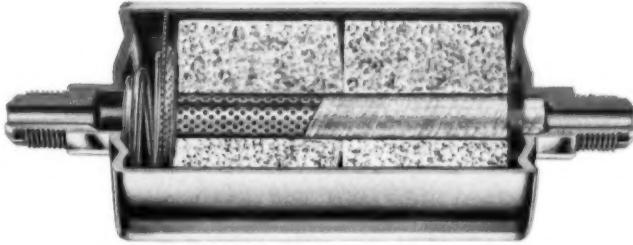


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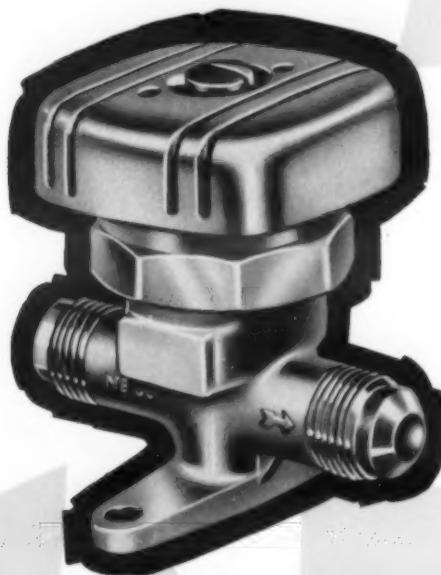
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What a fine set of matched clubs is to a golfer, the matched family of Linemaster valves is to you. There's a husky Linemaster series valve for every job . . . even in those unusual types, seldom-used sizes, and end connections. For a dependable, general purpose diaphragm line valve, nothing matches the outstanding performance of a Linemaster Regular. This sturdy, attractive valve features "super-sealing" through the use of triple diaphragm construction. In addition, a tough molded Nylon seat disc provides lifetime "super-seating". For heavy duty installations where back-seating and easy diaphragm inspection are important, the ideal valve is the Linemaster Special—Type III. The back-seating design of this valve makes it possible to remove the hand-wheel, operating screw, bonnet and diaphragms while the valve and line are under pressure. This big family of "out of this world" Linemaster valves includes line shutoff valves in two-way, three-way, straight-through and angle, as well as hand expansion and purge types in all popular end connections. This means that in the complete Linemaster series you can get a dependable, high quality valve to meet every installation requirement.

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New Mueller Brass Co. pressure relief valves provide positive action and high volume discharge. Safety-Masters are built to meet the A.S.A. B.9 safety code, comply with the A.S.M.E. code, and are certified by the National Board. Safety-Masters are available in pressure settings from 150 lbs. to 450 lbs. Settings are factory-accurate and are stamped on the body of the valve. All valves are safety sealed to guarantee maintenance of setting accuracy. In operation, the unique instant action of the valve seat disc relieves pressure without chatter or vibration, and provides complete and positive reseating. Safety-Masters are available in 12 different end connections in straight-through or angle type, and are all made from premium quality brass for superior strength. Every Mueller Brass Co. pressure relief valve is packed in strong metal edge cartons for complete protection until installation. Be sure to specify Safety-Master . . . another new Mueller Brass Co. product that is "out of this world" in design, engineering and performance.



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Flare or Solder-type Fittings.



Be sure to get these fine new products at better wholesalers everywhere.

MUELLER BRASS CO., PORT HURON, MICHIGAN

Sporlan Bulletin Covers 'Catch-All' Filter-Drier

KEY NO. S-510

ST. LOUIS—A new bulletin (40-10) dealing with the Sporlan Valve Co.'s "Catch-All" filter-drier is now available.

The new 12-page brochure, illustrated in two colors, covers the application, installation, capacities, and specifications of the Catch-All.

In addition, it gives the "Inside Story of the Catch-All," facts about decomposition of refrigerant oils, and acids in the refrigeration system.

Publish Diffuser Selection Manual

KEY NO. S-511

NEW YORK CITY—Anemostat Corp. of America recently announced publication of a new 80-page "Selection Manual No. 60" on air diffusers for air conditioning, heating, and ventilating systems. It supersedes Selection Manual No. 50.

The new manual contains numerous diagrams, tables, and photographs to aid in correct selection of diffusers and accessories for all-air high velocity as well as conventional air conditioning systems and units.

Included are air distribution definitions, sound level characteristics, static pressure factors, and typical installations.

Brochure Illustrates 2, 3½-Hp. Air-Cooled Units

KEY NO. S-512

NEW YORK CITY—An eight-page, three-color brochure on American-Standard Air Conditioning Div.'s new 2 and 3½-hp. air-cooled packaged air conditioners, is now available through Air Conditioning Div. wholesalers.

This brochure contains complete specifications on the ACP units as well as assisting consumer sales by explaining the functions and assets of air conditioning and showing typical residential and light commercial applications, the firm said.

Outlines Short, Long Power Calculations

KEY NO. S-513

SCHENECTADY, N. Y.—A 16-page power requirements section, showing short and long form calculations for heating applications, is included in the new 1957 catalog of General Electric Co. heaters and heating devices.

The 72-page publication includes information on such new products as redesigned cartridge heaters, miniature soldering irons, aluminized steel sheath strip heaters, and new coatings and configurations of finned tubular heaters. Also described are the new ceramic-to-metal and plastic resin hermetic seals.

In the power requirements section, each heating process is described. Typical application prob-

lems are solved to give heating requirements in both a long and a short form method. Long form calculations will give answers more precisely, for applications where the exact amount of heat required is critical. Short form calculations give adequate accuracy for ordinary heating requirements.

Designated bulletin GEC-1005H, the publication includes data, specifications, operating information, and manufacturer's recommended list prices of standard G-E heaters and heating devices. Included are immersion, strip, cartridge, tubular, finned tubular, and railroad switch heaters.

Catalog Details

Custom Built Items

KEY NO. S-514

NEW YORK CITY—S. & R. Soda Fountain Mfg. Co. here recently issued a new catalog on its custom built items.

The catalog covers the complete line of soda fountains and equipment, including prices for standard units and many alternate sizes.

Bulletin Describes 'Roll-O-Vent' Filters

KEY NO. S-515

LOUISVILLE, Ky.—A new product bulletin describing the new line of Herman Nelson "Roll-O-Vent" air handling units that incorporate automatic air filtration, has been released by American Air Filter Co., Inc.

Bulletin No. 780 explains the adaptability of the "filtering by the roll" principle to Herman Nelson heating and ventilating units, industrial heaters, auditorium unit ventilators, and air conditioning units.

It discusses the construction of the glass fiber filtering media that is rolled on a spool in a manner similar to a roll of photographic film, is automatically fed across the air stream of the air handling units and collected on a take-up spool for easy disposition.

The bulletin also includes the advantages of the disposable filtering media that permits "once a year maintenance," and the operation of the Roll-O-Vent unit. Dimension drawings and charts

for the basic unit and for accessories are shown.

12-Page Bulletin Covers Evaporative Condensers

KEY NO. S-516

WAYNESBORO, Pa.—A new 12-page bulletin (234-G) covering evaporative condensers was recently published here by Frick Co.

Illustrated, the booklet describes operation, coil, design, pumps and fans, housing, assembled units, galvanized construction, pre-coolers, super-controls, and capacities and ratings of the units. Diagrams and dimension charts are also included.

Hermetic Centrifugal System Described

KEY NO. S-517

HARRISON, N. J.—Worthington Corp. announced a bulletin C-1100-B95P covering its new hermetic centrifugal refrigeration unit available in sizes from 100 to 500 tons capacity.

Issues Catalog On Ice Builders

KEY NO. S-518

UTICA, N. Y.—Tom Lockerbie, Inc. recently published a new catalog covering description and specifications on 88 models of "Air-Agitated" ice builders.

Units are designed for both direct expansion or full-flooded operation with low-pressure or ammonia refrigerants. All 12 pages of the catalog are devoted to information on these items.

Plastic Foam Insulation Literature Released

KEY NO. S-519

NEW CASTLE, Pa.—Complete information on Dyfoam, the new lightweight plastic foam insulation in long slab form, is available in a six-page brochure recently published by the Dyfoam Corp.

Physical properties, sizes, how to install, and finishes to be used are a few of the subjects thoroughly discussed in this easy-to-understand, illustrated literature.

"CLEAN LIVING" GIVES A CHEVY ENGINE LONGER LIFE!

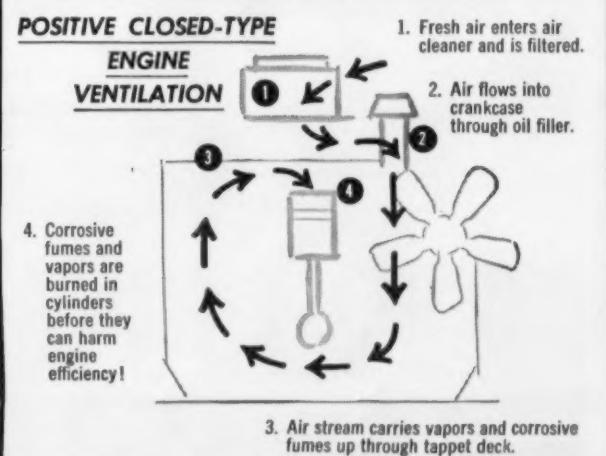
...more evidence that Chevrolet Task-Force trucks are engineered better and built better for bigger savings!

This drawing shows, roughly, one of the ways in which Chevrolet truck engines minimize a major cause of wear—dirt! Now consider this additional evidence that Chevy heavy-duty V8's and 6's "live clean" and bring you fleet, dependable power that costs less to use!

Extra filters give extra-clean fuel—Only clean fuel reaches the engine—that's one reason you can depend on a Chevrolet truck! All fuel is filtered twice (once in the fuel tank and again in the carburetor) to keep dirt and water from hampering efficient operation. Chevrolet truck V8's provide a third filter, at the carburetor, for triple protection!

Oil stays clean longer, too—Chevrolet truck V8's and 261-cu.-in. 6's come equipped with modern high-capacity oil filters (V8 filters are of the Full-Flow type). These engines keep clean oil flowing to moving parts; parts wear less and last longer because of it!

Even the air is cleaner—Dust and foreign matter in the



air an engine "breathes" can reduce engine life by years. Chevrolet minimizes this wear-producing factor by providing big oil-bath air cleaners as standard equipment on all truck engines.

These are sound under-the-hood reasons why a Chevrolet truck will stay on your job and save on your job. There are others, too, including short-stroke V8 design (shortest stroke of any truck V8's!) and 6-cylinder engine design that puts out more power than any other in the field. You'll learn about them all when you visit your Chevrolet dealer. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



Biggest sellers . . . because they're biggest savers!

CHEVROLET TASK-FORCE 57 TRUCKS

For more information about products advertised on this page use Information Center, page 29.

Handy Tube Bender

Smoothly Bends any pipe or tubing $\frac{3}{8}$ "- $1\frac{1}{8}$ " O.D.



HOLSCLOW BROS., INC.
428 N. Willow Road • Evansville, Indiana

Industrial Applications

Air Conditioning Sales Gain Ups Trane Profit 66% In 1956

LA CROSSE, Wis.—The count when comparing figures Trane Co. has reported 1956 for the two years," it was pointed out.

Backlog of \$31,600,000 at the end of 1956 was the highest in the history of the company.

Consolidated sales increased from \$54,061,937 in 1955 to \$74,433,851 in 1956.

The annual report noted that while sales of all product lines increased, "our most significant gains were made in the sale of air conditioning equipment. This was anticipated since the market in air conditioning is expanding more rapidly than that for heating products."

Profit moved up to \$5,739,618 for 1956, compared with \$3,452,753 in 1955, the previous high.

"A six-week strike in the fall of 1955 should be taken into ac-

count when comparing figures for the two years," it was pointed out.

Net earnings per share for 1956 were \$2.90, compared with a corresponding 1955 figure of \$1.74, calculated on the basis of 1,979,846 shares of common stock outstanding after a 3-for-2 stock split Oct. 4.

Also, on Oct. 4 an increased cash dividend was declared equal to 22½ cents per share on the shares outstanding after the stock distribution. Total cash dividends amounted to 71 cents per share in 1956 as compared with 61 cents for 1955.

During 1956, Trane sold 120,-

000 shares of common stock, providing \$5,700,000 for financing expansion.

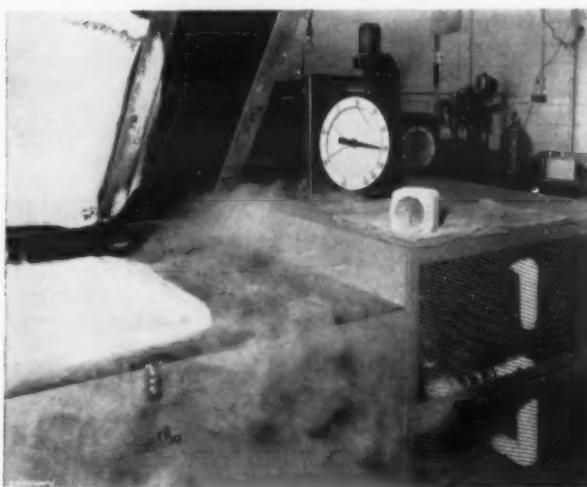
In a message to stockholders, Trane President D. C. Minard said, in part:

"With our expanded product lines and our company manned in greater depth than ever before, we believe we are in the best competitive position in our 44-year history."

During 1956, manufacturing space was added at plants in La Crosse, Scranton, and Toronto. Further additions will be necessary in 1957 "to help us keep pace in our growth-conscious industry," Minard said.

Progress was made on a new engineering building and an addition to the Trane research center—"The House of Weather Magic." According to Minard, the 1956 laboratory increase is enabling the company to expand its tests.

Air Conditioning & Refrigeration News, May 6, 1957



FREEZER developed by Webber Corp. achieves temperatures of -200° F. to study effects of extremely low temperatures encountered at high altitudes on intercontinental ballistics missiles.

Freezer Achieves -200° Temperature To Permit Study of High Altitude Effect

INDIANAPOLIS—A freezer stages, using Refrigerant 22, 13, and 14. At -200° F., gasoline -200° F. has been developed by the Webber Corp., it was announced recently by Robert C. Webber, president.

Designed for studying the effects of extremely low temperatures on intercontinental missiles, the first model of the new WE-2-800 unit has been successfully tested and delivered to the Glenn L. Martin Co., Denver.

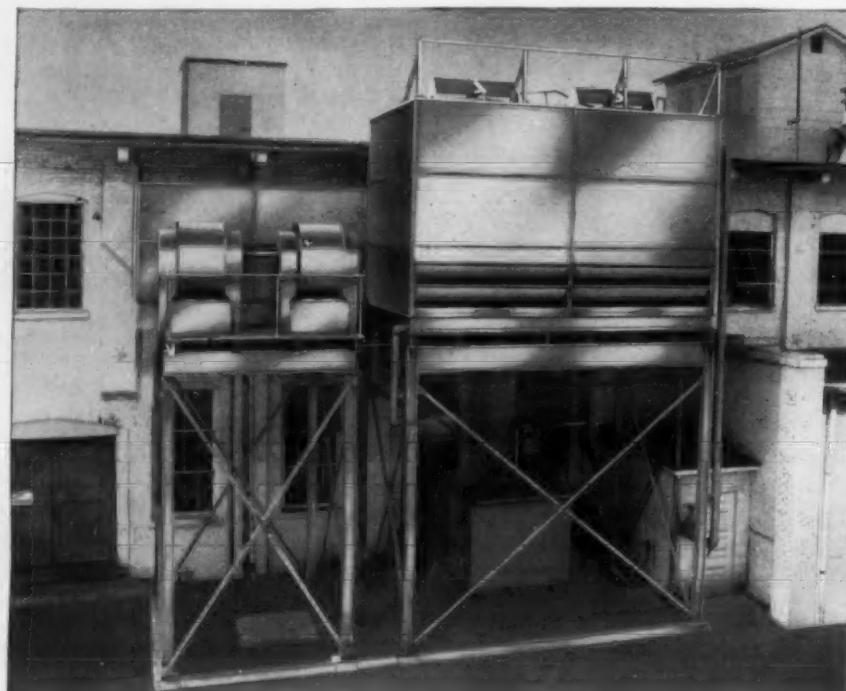
Webber explained that an object zooming straight up from the earth's surface experiences a temperature drop of three degrees for every 1,000 ft. of ascent.

Hence, a missile traveling at 200 to 300 miles above the earth is encountering temperatures down around -200° F., a condition about which science has very little information.

Our scientists need to know how much shrinkage takes place, how this shrinkage affects the missile, aerodynamically, how the propellant is going to react at -200° F., and the answers to hundreds of other questions, heretofore unanswered, it was stated.

The new WE-2-800 achieves its low temperatures in three

RICHCO PLASTIC CLAMP
Tops for OEM use
Shock and chemical resistant, non-corrosive, strong and durable. Lowest cost anywhere. Let us quote your needs. All sizes from $\frac{1}{8}$ " to $1\frac{1}{4}$ ".
RICHCO PLASTIC CO.
4445 Fullerton Avenue
Chicago 39, Illinois



Binks cooling towers—a youngster and an old-timer—work side by side at Vick Chemical Company, Greensboro, N. C. Tower at left was installed 17 years after tower at right which still serves faithfully.

Vick Chemical Company...

Supplements 1936 installation with second Binks cooling tower

17 years after their first Binks cooling tower installation, Vick Chemical needed additional cooling capacity. The dependable performance of their existing Type "K" mechanical draft tower was a decisive factor in selecting a second Binks cooling tower installation.

New Binks Series 3-B tower cross-connected with first tower

The new Binks Series 3-B cooling tower is used for condensing process steam. The old tower is presently used for the air conditioning system. Each installation is independent of the other but cross-connected so that each may stand by for the other in cases of emergency

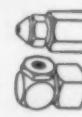
or during periods of maintenance.

Built-in long life

Case histories proving the dependable performance of Binks cooling towers are not uncommon. All parts are built to rigid specifications which insure long life. And, Binks cooling towers are designed for easy periodic maintenance, a factor appreciated by those who must do the work.

For full information

on Binks complete line of mechanical and natural draft cooling towers, write directly to the address below. Binks engineers will gladly study your needs and help you select the correct tower for your requirements.

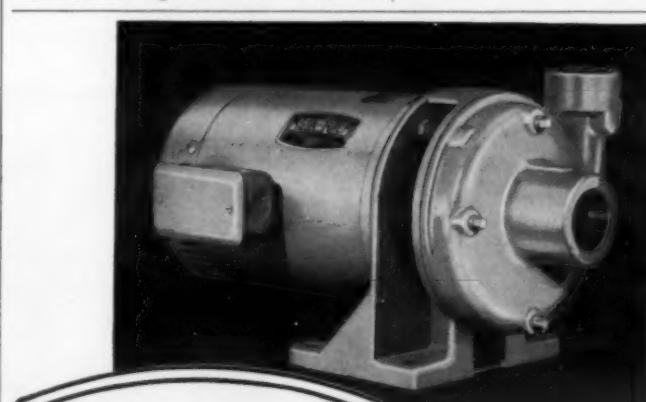


A COMPLETE LINE OF NATURAL DRAFT AND MECHANICAL DRAFT COOLING TOWERS AND INDUSTRIAL SPRAY NOZZLES

Binks Manufacturing Company

3116-38 Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY



STA-RITE

the ONE pump
designed to cut costs of
AIR CONDITIONING INSTALLATION
AND MAINTENANCE

You and your customers get more for your money with Sta-Rite. First cost is usually lower than comparable pumps. More—check cost per gallon delivered. Cost of installation. Cost of maintenance. Yes, and check cost against the expected life of the pump. Sta-Rite pumps give you clear-cut superiority. You see it the way we make bronze impellers, the full-power, ball-bearing, capacitor-type motors, the leak-proof mechanical seal, the one-piece corrosion-resistant shaft.

STA-RITE

STA-RITE PRODUCTS, INC.

701 S. Eighth Street, Delavan, Wisconsin

Los Angeles, Calif. • Chamblee, Ga.

In Canada: STA-RITE Pumps (Canada) Ltd., Ajax, Ont.



For more information about products advertised on this page use Information Center, page 29.

Buffalo Forge Net Earnings Up 30% In Fiscal '56 over '55

BUFFALO—Net earnings of Buffalo Forge Co. in the fiscal year ended last Nov. 30 increased 30% from the previous year while consolidated net sales rose 19.5%.

Net income after Federal taxes for the 1956 fiscal year rose to \$1,994,985, equal to \$3.07 a share, from \$1,534,553, or \$2.36 a share, in the previous fiscal year. Profit before Federal income taxes amounted to \$4,223,615 in the latest fiscal year, compared with \$3,055,177 in the 1955 fiscal year.

Consolidated net sales in the latest fiscal year rose to \$30,023,214 from \$25,121,147 in the previous year.

The latest sales figure was the

Cooling, Commercial Refrigeration Sales Up 10% In Jan. over Dec.

WASHINGTON, D. C.—January sales of air conditioning and commercial refrigeration equipment distributors increased 10% over last December but fell 1% below the like month of 1956, reports the Bureau of the Census.

In addition, inventories of the same distributors at the end of January rose 2% over the Dec. 31 level and climbed 6% over the preceding January.

Electrical appliance, TV, radio set, and electronic parts distributors' sales dipped 11% in January from the previous month but were up 8% over the same month in 1956.

Inventories for these items were up 5% over the end of December and 10% higher than on Jan. 31, 1956.

Plumbing, heating equipment, and supplies distributors' sales dropped 2% this January from December but remained the same as the prior January. End-of-month inventories rose 1% over December and remained the same as January, 1956.

Air Condition Post Office

JACKSONVILLE, Ark.—Jacksonville has dedicated Arkansas's first air conditioned post office. The new post office cost \$125,000.

Redmond
MICRO MOTORS
One of largest stocks
in the world!
FACTORY DISTRIBUTOR
MARVIN L. "FERGIE" FERGSTAD
CYCO-FREEZE CORP.
6318 Cambridge, Mpls. 16, Minn.
West 9-6794

Looking for
a Business to Buy . . . ?
Check the
Business Opportunities
Section
in the classified
advertising columns.

second best in the company's history, topped only by the \$30,764,402 recorded in 1944.

The Buffalo Forge chairman said all divisions of the company contributed to the increased sales and added that sales of the concern's Canadian subsidiaries reached an all-time high.

Working capital of Buffalo Forge at the end of the latest fiscal year stood at \$9,756,000, compared with \$9,136,000 a year earlier.

The chairman and president said that inventories last Nov. 30 totaled \$5,952,727, up nearly 25% from a year earlier, reflecting "increased requirements for unfilled orders at the year-end and anticipated increased shipments" in the current fiscal year.



Worthington Opens Cooling, Refrigeration School Tour

LEFT: A panel board is used by W. C. Clow, Worthington director of service education (center) to visually explain unit operation to two field servicemen attending the opening 1957 service school in Atlanta.

HARRISON, N. J.—The first 600 Worthington wholesalers and dealers. During a 7-weeks' display panels, cut-a-way cross sections, and other items to assist in illustrating the lecture series.

Installation and servicing of Worthington packaged, residential, and central station equipment was the subject of the meeting which was attended by approximately 30 Worthington wholesalers and dealers.

An annual event, the field service meetings reach about

the service meetings constituting this year's series, the 8th of these annual series sponsored by Worthington.

Purpose of the meetings is to upgrade field servicemen with practical education in refrigeration techniques, better equipment for installing and servicing Worthington equip-

Other cities where meetings were slated to be held are: Philadelphia; Indianapolis and Lafayette, Ind.; Chicago; Seattle; Alhambra, Calif.; Phoenix; Salt Lake City; Kansas City, Mo.; St. Louis; Davenport, Iowa; Buffalo; Syracuse, and New York City; and Stamford, Conn.

In the fabulous Americana Hotel, Miami Beach

Architect, Morris Lapidus



J-E SOLENOID VALVES

Quietly and Dependably Control
the Personalized Air Conditioning
in 475 Guest Rooms

The nation's newest luxury hotel, The Americana, owned and operated by Tisch Hotels, Inc., has individually-controlled air conditioning, for heating or cooling, in every guest suite. Hill York Sales Corp., the air conditioning contractor, selected Jackes-Evans Solenoid Valves to assure quiet, dependable, personalized control of room temperatures.

J-E Solenoid Valves have a long and proven record in providing positive automatic temperature control for circulating chilled and/or hot water systems using fan-coil units in individual spaces of multiple room buildings. They quietly control flow of water without

fluid shock or chatter—dependably respond to thermostat demands.

Unique J-E advantages include resilient synthetic diaphragm . . . no mechanical linkage or impact action to cause noise . . . tight seating with no bubble tolerance . . . simple design with only two moving parts . . . no metal to metal contacts to wear . . . flexible diaphragm that eliminates clogging.

Whatever your requirements, for a completely satisfactory job specify and use J-E Solenoid Valves. Call your wholesaler or write direct today.



Controls Division
JACKES-EVANS MANUFACTURING COMPANY

4427 Geraldine Avenue • St. Louis 15, Missouri

For more information about products advertised on this page use Information Center, page 29.

What's New

Blower-Coil Summer Conditioner Developed



KEY NO. G-510

MILWAUKEE—A new, blower-coil summer air conditioning unit, adaptable for a year-round forced filtered air system, with the addition of an optional heating coil, has been developed by Mueller Climatrol.

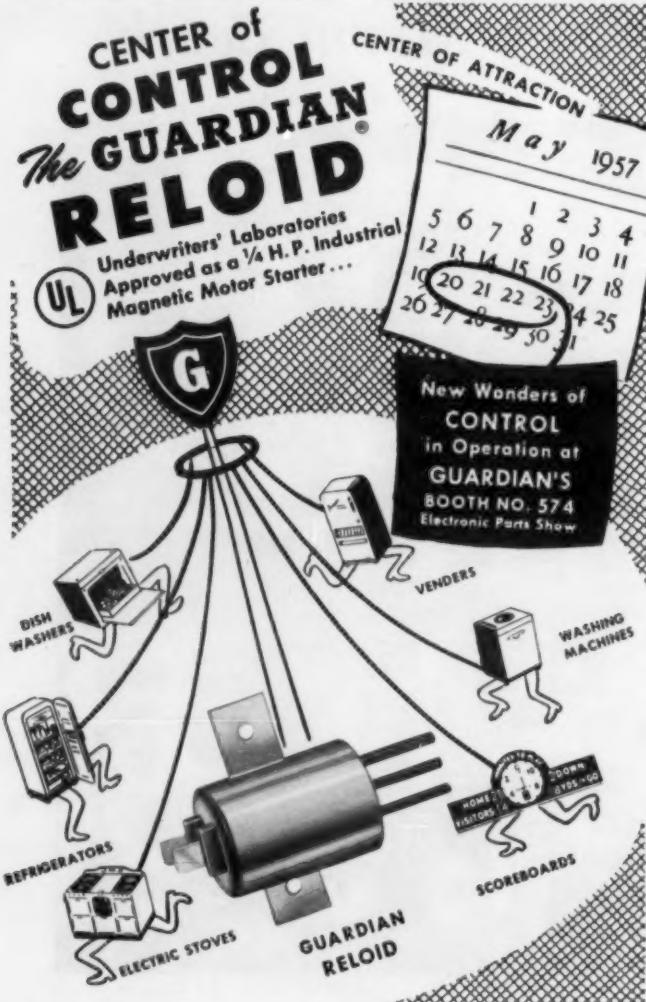
Called type 917, it is designed to operate with remote air or water-cooled condensing units. Cooling capacity depends on the condensing unit selected and the

conditions under which it operates. It is available in 2, 3, 5, and 7½-ton capacities.

Where floor space is at a premium, type 917 is suited for suspended installation. The unit has a centrifugal-type blower which can be used with an extensive ductwork type distribution system. Both blower and motor have permanently lubricated ball bearings. An optional return air grille and air discharge plenum provide a unitary air conditioner for a variety of consumer, commercial, and industrial installations, the company said.

The cooling coil is a copper tube with aluminum fins for maximum heat dissipation and uniform air flow. A thermostatic expansion valve provides positive control of refrigerant flow for uniform performance. The optional heating coil gives the required heating surface for maximum efficiency under all operating conditions.

The continuous duty motor is equipped with integral overload protection.



● Connect up a Guardian RELOID in your circuit and you have a control that carries U.L. approval for appliance assemblies. In a special version the Guardian RELOID carries U.L. approval marking as a ¼ H.P. Industrial Motor Starter. Guardian RELOIDS are totally enclosed to resist impacts, dust and moisture—compact to save space—sturdy to outlast your product—flexible in application—priced extremely low.

COIL—Standard Voltages: Available for operation at 6 to 230 volts, 60 cycles A.C., or 6 to 110 volts D.C. Frequency: Standard 60 cycles. Available 25 to 60 cycles upon specification. Terminals: Standard, two male A.M.P. terminals.

CONTACTS—Rating up to 8 amperes at 115 volts, non-inductive. Combination: specify either single pole, single throw, or single pole normally open or normally closed. Insulation: Molded bakelite, tested at 1,500 volts, 60 cycles. Terminals: Three contact leads plugged with molded bakelite. Specify either A.M.P. or Douglas type terminals.

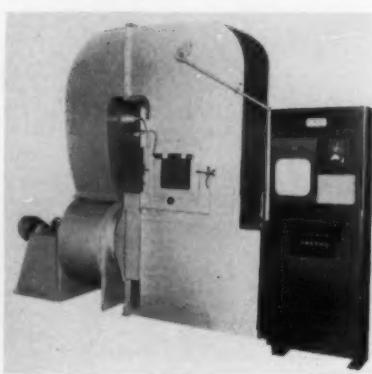
GUARDIAN POWERLOID
For control of 230 V.
A.C. loads up to
3 H.P. Motors
and 6400 Watt
Heater loads.
Totally enclosed.
Low priced!

The GUARDIAN
SERIES 2100-U
25 Ampere
POWER RELAY
with Interchangeable Coil
NO SOLDER CONNECTIONS REQUIRED!

write

on your company letterhead to arrange for a Production Sample of Guardian's Reloid. Get literature on Guardian Relays, Steppers, Solenoids, Switches.

GUARDIAN ELECTRIC
1603-F W. WALNUT STREET
CHICAGO 12, ILLINOIS
“Everything Under Control”



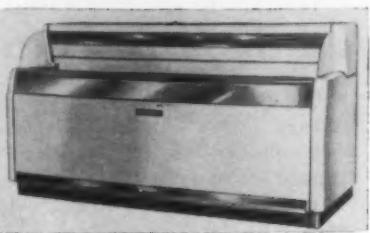
Produces 24.1 Cu. Ft. Self-Defrosting Freezer

KEY NO. G-513

FLEETWOOD, Pa.—A new automatic self-defrosting food freezer was recently offered by Pinnacle Equipment Corp.

Compact enough to fit in a space 3 by 8 ft., the freezer holds 1,248 10-oz. frozen food packages or 1,170 pint packages of ice cream in its 24.1-cu. ft. storage bins.

Having porcelain finished inside and out, the freezer is equipped with a time switch which permits fast, electrically-controlled automatic defrost without affecting



the product stored within.

SDF8 is said to permit wider aisles and fluorescent lighting adds merchandising appeal to products stored inside.

Offers Sand, Dust Test Chamber

KEY NO. G-511

UNION, N.J.—A new type of sand and dust environmental test chamber, manufactured by Tenney Engineering, Inc., is now available with complete instrumentation.

The Tenney sand and dust chamber stabilizes the composition and density level of sand and dust by continuously purging a small amount of dust-laden air which is recirculated to exhaust outside of the chamber. Make-up air and sand and dust replace the exhausted air. Now relative humidity is automatically maintained. Chemical dehydration is not required, the company indicated.

Available in a wide range of standard velocity levels for applicable MIL specs, all Tenney-engineered units incorporate mechanical refrigeration and heating systems that supply uniform internal chamber temperatures with operating ranges of 25° C. and 70° C., tolerance $\pm 2^\circ$ C. Relative humidity is maintained below 30%. Other claimed features include convenient high-capacity sand hopper and nine-point, 35-ampere terminal connection.

The chamber is furnished with a full opening door with viewing window. This window is supplied with wiper and illuminating fluorescent light. Ruggedly constructed of heavy-gauge steel, all standard chambers are finished in silver-gray hammertone.

In addition to the many conventional types available Tenney can supply custom-made types for specific requirements.



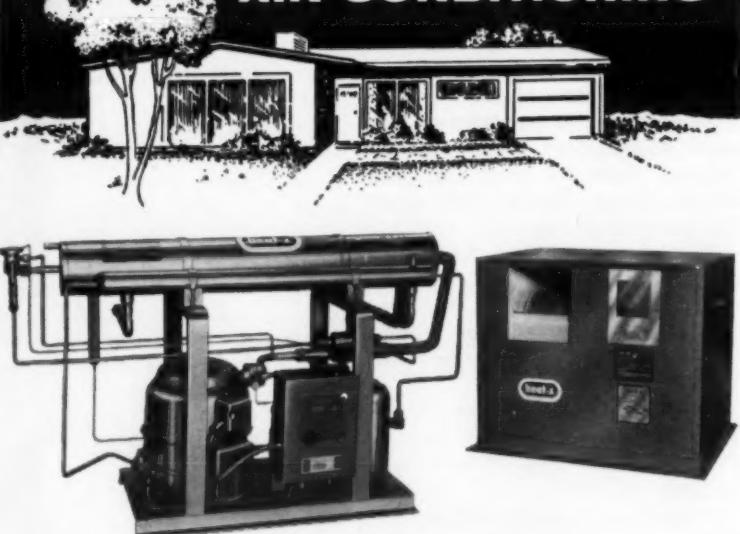
KEY NO. G-514

HUDSON, N.Y.—Foster Refrigerator Corp. recently announced a

new complete 20 model line of beverage and milk coolers.

Designed to meet every need for beverage and milk coolers, the line is composed of five self-contained and five remote models of "Satintone" beverage coolers from 12 to 40-cu. ft. capacity. Twin fan cooling system assures quick pull down and heavy-duty service, the company claims.

BOOM FORECAST in RESIDENTIAL AIR CONDITIONING



Assure YOUR Profit Share

with these NEW heat-X Units



Pittsburgh Lock Hammer Closes Duct Seams

KEY NO. G-512

MILWAUKEE—Milwaukee Electric Tool Corp. recently developed a new model PLH-1 Pittsburgh lock hammer for air conditioning, heating, ventilating, and sheet metal contractors' use.

Built for heavy-duty use with ball and roller bearings throughout, the unit makes an "easy operation" of closing the seam in fabricating ductwork, the firm claims. It handles 30 to 22-gauge sheet metal and the 9¾-lb. rests on the work. Position of the handle affords positive control and balance, guides easily along the duct seam, it was stated. Trigger-type switch locks in the on position for continuous operation. Price is \$137.50.

Completely packaged water chillers... in 2, 3 and 5 HP models... designed for easy, speedy installation that builds profits. Available in water-cooled models ('RPC') and air-cooled models ('ARPC'), these new Heat-X units were developed specifically for residential and light commercial air conditioning systems.

High efficiency patented Inner-Fin® construction of chillers, superheaters and condensers makes these the most compact units on the market. All water passages are of non-ferrous construction, eliminating corrosion problems.

Don't be left behind in the coming residential air conditioning boom. Write today for complete data on 'RPC' and 'ARPC' units.



HEAT-X, Inc.

A Subsidiary of Dunham-Bush, Inc.

BREWSTER • NEW YORK

Introduces 'Roll-Kleen' Automatic Dry Filter



KEY NO. G-515

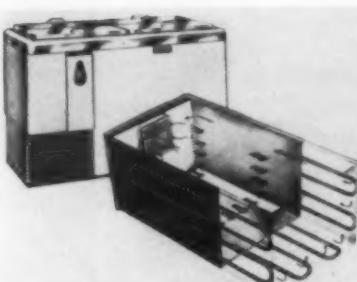
LOS ANGELES — Production and deliveries have been started on a new type, automatic dry air filter by Farr Co. here.

Known as the "Roll-Kleen," the filter has glass fiber media which extends from the clean media roll at the top of the unit, over the filter face of the unit, and on to the used media take-up roll at the bottom of the unit.

When special instruments sense that air flow through the media has dropped to the allowable, preset limits due to accumulated dirt, the take-up roll automatically pulls clean media over the entire filter face.

Other than occasional visual inspection, the unit is virtually maintenance free, it is claimed. Two maintenance lights, which may be located anywhere, advise when the media is changing and when roll should be replaced.

Roll-Kleen units are manufactured in standard widths of 3, 4, and 5 ft. with heights ranging from 5 to 15 ft.



Develops 'Forced-Air' Bottle Cooler

KEY NO. G-517

PUNXSUTAWNEY, Pa. — To meet fast turnover requirements of modern merchandising, Punxsutawney Co. announces it has developed a new "Beverage-Air" bottle cooler termed "Forced-Air."

Cooling fan operates only when the unit is running so it is claimed to assure a positive even flow of refrigerated air throughout the storage areas. Available in two large-capacity models with baked enamel front and ends, units are said to offer rapid cooling.

Offers Electronic Testing, Stabilizing Unit

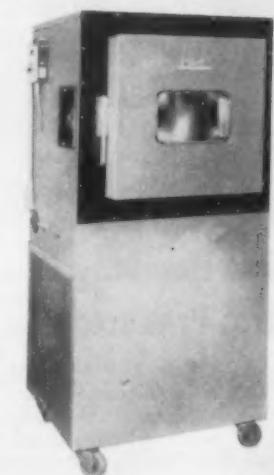
KEY NO. G-518

INDIANAPOLIS—Model WE-3-125 + 350 for electronic testing and stabilization of metals with a temperature range from -125° F. through ambient to 350° F. has been introduced here by Webber Corp.

Pull-down time from ambient to -100° F. is approximately 45 minutes, to -125° F. in approximately one hour, the company said. On heat cycle it raises temperature from -125° F. to 300° F. in approximately 15 minutes. Forced air circulation is 427 c.f.m. Unit has a variable heating cycle of from 1 to 1,800 watts and safety control is set at 350° F., it was added.

Capacity of the unit is 3 cu. ft. with inside dimensions 16 by 16 by 16 in. Outside dimensions 28 by 32 by 66 in.

Construction features circulating fan, externally mounted motor with a lifetime Teflon bearing. Unit is front opening and casters finished in industrial gray or vista green. It weighs approximately 450 lbs. and operates on 230 v. with two keys supplied and a thermopane visual port. The 6 by 8-in. terminal panel is removable. Unit has stainless steel interior. Exterior is of steel construction



Redesigns 3-Pole Time Switch In 4 Dial Styles

KEY NO. G-516

MOUNT VERNON, N. Y.—A redesigned and improved three-pole time switch, model 1963, was recently announced here by Tork Time Controls, Inc.

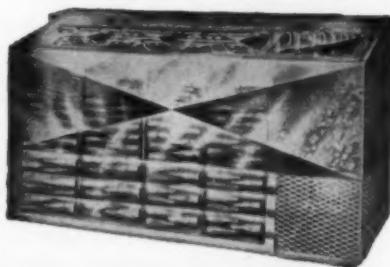
Offered in four dial styles—24-hour, skip-a-day, astronomic, and seven-day dial—in enclosures best suited to the particular installation, model 1963 can be used to control a 1½-hp. three-phase motor directly, the company said.

Electric heater loads may be controlled up to full rated capacity for each pole of the unit is rated at 25 amps, it was added. It utilizes heavy-duty "Ilsco" lugs that are claimed to take up to No. 8 wire without bending. Model 1963 uses beryllium and brush copper for snap-action. It is priced from \$24.95.



1963 uses beryllium and brush copper for snap-action. It is priced from \$24.95.

"A CASE OF COOL JUDGMENT"



**FLO-COLD
DRINKMASTER
STAINLESS STEEL
CUBER — COOLER.
SOLD THRU DEALERS ONLY
WRITE**

**United Frigulator Engrs.
MENOMINEE, MICH.**

AVAILABLE IN SIZES 4 to 10 FT.

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised (list name, page, and issue date)

What's New or Current Literature Available

Key No. Key No.
Key No. Key No.

Name Title
(Please Print)

Company

Street

City..... Zone..... State.....

Type of Business

MAIL THIS FORM TO

AIR CONDITIONING & REFRIGERATION NEWS
Readers Service Dept.

450 W. FORT ST. DETROIT 26, MICHIGAN

They'll want to finance it, so call in COMMERCIAL CREDIT

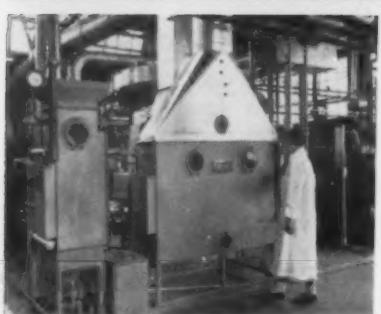


MAKE YOUR PROPOSALS COMPLETE . . . most of your prospects need their cash and usual lines of credit for current operations . . . make it easier for the prospect to sign on the dotted line by including financing arrangements. COMMERCIAL CREDIT'S Refrigeration Plan is backed by many years' experience, handling financing for thousands of commercial refrigeration and air conditioning installations. Let us show you how COMMERCIAL CREDIT'S method functions smoothly . . . saves you time and trouble. Over 300 offices assure fast service. Call our office in your city or write COMMERCIAL CREDIT CORPORATION, Commercial Credit Building, Baltimore 2, Maryland.



COMMERCIAL CREDIT CORPORATION • A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$200,000,000 . . . offices in principal cities of the United States and Canada.

What's New (cont.)



Selective Humidity Control Produced

KEY NO. G-519

TOLEDO—Air Conditioning & Drying Div., Surface Combustion Corp. here recently announced a newly-designed series of model "C Kathabar" units for selective control of humidity applications.

They may be used in processing for maintaining production areas at 80° and 55% relative humidity or below, the company stated. For holding storage rooms, they maintain constant temperature.

Claimed to remove over 97%

of all airborne bacteria and mold spores for comfort and process air conditioning, the units eliminate corrosion problems by use of nickel construction on the regenerator, it was noted.

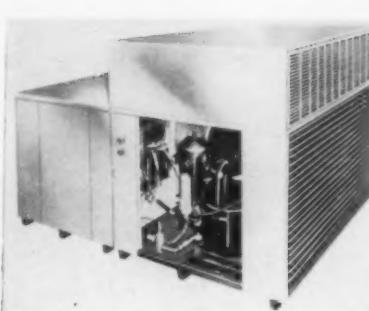
Porthole type glass inspection doors provide internal visibility and permit accessibility to sumps, eliminator chambers, and fan chambers. Filtering surface has been increased and the filter component is designed for removal to facilitate minor maintenance, the company pointed out.

Adds 5-Ton 'Stowaway' Central Conditioner

KEY NO. G-5110

MARSHALLTOWN, Iowa—Developed from the 3-ton "Stowaway" air conditioner introduced in 1956, Lennox Industries, Inc. here recently announced a 5-ton air-cooled Stowaway unit.

Completely self-contained, the central air conditioner consists of two parts—evaporator and condenser section. Made separately



to ease handling, the parts are quickly connected on the job, the company said. No special equipment is needed.

Condenser air is pulled through condenser coil at the front of the unit and exhausted out the top through an optional soundproof discharge hood or a length of duct. Nearly 2 sq. ft. of net face area per ton of cooling is on the condenser coil, it was noted.

Discharge hood muffles sound and permits installation with the condenser face flush with an exterior wall. Only one opening is necessary.

Evaporator section is lined with acoustical insulation.

Air Conditioning & Refrigeration News, May 6, 1957

Low Temp Frozen Food Display Case Offered

KEY NO. G-5111

BALLY, Pa.—A completely new frozen food display case, called Bally "Low Temp" has been designed by Bally Case & Cooler Co. here.

This new case "revolutionizes the entire concept of frozen food case design," the company claims. In addition to increased efficiency with low initial cost and low operating cost, it offers to the store owner the "largest" amount of frozen food display space for the "lowest" cost.

The new refrigeration principle called automatic defrost "Air Dryer System." This device captures the moisture from all air above the product on display and reduces frost formation on the inside walls of the case, the firm said. Without this frost formation, defrosting by introducing heat is no longer required. The result is that packages are always brick-hard and frost-free. And because there's no extra defrosting load in the display section, the refrigeration job is reduced greatly, it was

pointed out. Smaller compressors are used, with lower initial cost and lower operating cost.

Bally Low Temp is made in three sizes—11, 14, and 19 cu. ft. Smallest of these three cases uses a $\frac{1}{2}$ -hp. unit and the two larger sizes use a $\frac{3}{4}$ hp. Capacity of all machines is ample to provide below zero temperature in the hottest tropical climates, it was insisted.

Condensing units are fully sealed, powerful, and quiet operating. No plumbing is needed—condensate is disposed of in a built-in evaporator pan.

Case construction is welded steel, full exterior is covered with acid-resistant porcelain enamel and interior is completely clad with heavy-gauge stainless steel. This case is equipped with a night cover which is concealed during daytime operation.

Temco Improves Gas Heating Unit Line

KEY NO. G-5112

NASHVILLE, Tenn.—A number of product improvements in its gas heating equipment line were announced by Temco, Inc.

Major changes include development of a built-in draft relief on wall heaters to lower stack temperatures. Blower attachment on wall heater, which provides more rapid heated air circulation, is now available for single wall model as well as dual wall unit, the company stated.

A change in the space heater line is the use of a diffusion-type blower assembly to provide more even flow of warm air at floor level. Included in the controls for both space and wall heaters are Minneapolis-Honeywell "Pilotstat" and "Adatrol."

Temco air conditioning equipment now includes 2 and 4-hp. self-contained multi-zone units with pre-fab ductwork. For use with warm air furnaces, this equipment now features pre-charged lines and pre-charged components. A suspended air-cooled air handling unit for commercial applications has also been added.

Throughout the line Temco heat exchangers are finished in high-temperature porcelain enamel which the firm designated "Ceramic-Clad."

Factory-Sealed Suction Filters Produced

KEY NO. G-5113

LIVINGSTON, N. J.—The refrigeration division of the McIntire Co. recently announced a complete line of factory-sealed suction filters for permanent installation in line sizes from $\frac{1}{2}$ -in. o.d. through $1\frac{1}{8}$ -in. o.d.

Utilizing the "Formed Felt Filter Elements," this new line of suction filters has proved successful after a year of intensive field service.

McIntire reports it has spent years on research and development of this five micron filter which will hold back particles 27 times smaller than will pass through a regular 100-mesh screen.

UNIFLOW SWITCHES TO RUBATEX TUBING FOR SWEAT-PROOF INSULATION AT LESS COST

Cold lines in six Uniflow water cooler fountain models and ice cube maker now insulated with this new closed cellular rubber tubing insulation.



"We find Rubatex particularly applicable to our uses mainly because it doesn't absorb water and at the same time provides the insulation necessary at the points where it's used. We also believe Rubatex will last longer. Lower initial cost and fast deliveries were additional influencing factors in our switch to Rubatex."

L. E. Green, Chief Engineer
Uniflow Manufacturing Company
Erie, Pa.



See how easily Rubatex is slipped on the Uniflow cold water line. Rubatex is especially adaptable where carriers are curved. Will readily bend without cutting or fitting—fits snugly to any contour of pipes.



Rubatex Tubing being applied to one of the refrigeration tubes in Uniflow "Kold-Draft" ice cube maker. After inserting Rubatex over tube, an air hose is used to easily speed-up installation.

**RUBATEX DIVISION, Dept. A-3
GREAT AMERICAN INDUSTRIES, INC.
Bedford, Virginia**

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Name _____

Rubatex's unique nitrogen-filled closed cellular rubber structure makes it resiliently soft and most adaptable as formed copper tubing insulation for any cold lines requiring sweating resistance . . . cannot absorb water . . . keeps pipes forever dry . . . eliminates any need for additional vapor barrier . . . gives it excellent weather-aging characteristics . . . plus unusually good fire-safe thermal insulation properties. What's more—initial cost of new Rubatex Tubing Insulation is surprisingly low and *deliveries can be made fast!*

Available in standard inside diameters of $\frac{1}{4}$ " to 2" with $\frac{3}{8}$ " and $\frac{1}{2}$ " wall thickness. Other sizes can be made to specification. Produced in any lengths up to 250 feet. Can be slit for installed piping.

RUBATEX
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TUBING INSULATION

Send for Free Sample and full details

For more information about products advertised on this page use Information Center, page 29.

Commercial Refrigeration

'World's Largest Super Drugstore' Features 4 Ice Cream Cabinets



FOUR Anheuser-Busch, Inc. AD 15-6 refrigerated cabinets are installed in new Katz "super" drugstore in St. Louis. Katz officials term this outlet "the world's largest super drugstore."

ST. LOUIS—Four ice cream cabinets are among features of a new Katz "super drugstore" that was opened here recently with impressive ceremonies.

The new store is termed by Katz "the world's largest super drugstore." The Katz Drug Store chain operates 38 outlets throughout the country.

An estimated 45,000 customers passed through the new store during the first three hours of operation. The two-level, 32,000-sq. ft. store contains 67 departments offering more than 25,000 items, ranging from pharmaceutical products to pet monkeys.

In setting up the ice cream department, Katz officials chose four model AD 15-6 Anheuser-Busch refrigerated cabinets. The model has a capacity of 15 cu. ft. and is 72 in. long, 33 $\frac{1}{4}$ in. wide, and 40 in. high.

The cabinets refrigerate "Meadow-Gold" and Katz thriftpack ice cream and Costellos vegetable fat frozen dessert. These products are featured in this store as well as in all Katz stores in the greater St. Louis area.

Indicative of the popularity of this line of ice cream products was the sale of nearly two truck loads of ice cream and frozen dessert on opening day.

The model AD 15-6 installed at the new store features the gravity-type automatic defrost that continues to refrigerate while defrosting, Anheuser-Busch pointed out. It has an inclined glass front, and its interior lighting illuminates the

displayed packages, "adding to their sales appeal."

Other features of the cabinet are large flavor-strip moulding extending the entire length of the cabinet; an all-metal front; a self-contained night cover; and a retaining ledge around the superstructure "to neatly display tie-in articles."

Hussmann Reports Quarterly Net Sales Hit \$7,458,289

ST. LOUIS—Hussmann Refrigerator Co., in an unaudited statement, reported net sales for the three months ended March 31 of \$7,458,289 as compared to \$7,385,002 for the same period of 1956.

Net profit for the period was reported at \$446,903 this year and \$554,621 last year. With 1,200,282 shares presently outstanding, earnings were 35 cents per share this year against 44 cents per share in the first three months last year.

Prominent Refrigerator Display Boosts Drug Sales 20% In 2 Years

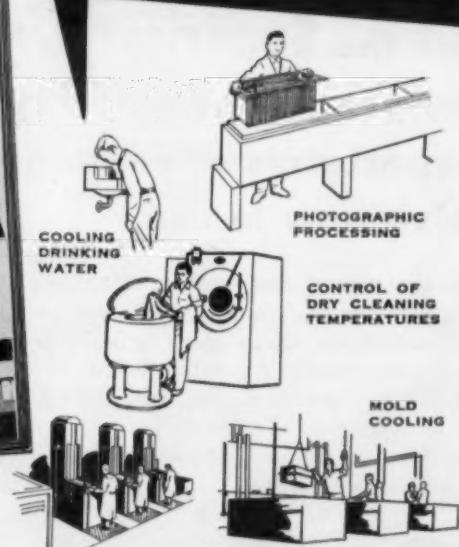
LONGMONT, Colo.—Putting biologicals in a new refrigerator was purchased for the purpose, and provides much larger storage capacity for some 18 varieties of biological drugs carried in stock.

Results were surprising, according to Sheeder Drug Store here, according to owner A. R. Sheeder.

Prior to the change, the Sheeder store maintained a larger inventory of drugs, but it likewise turned up almost twice as many customers, for such products as insulin, as he had realized existed in this community of only 12,000. Sales of biological drugs for veterinary and animal husbandry uses also picked up, according to Sheeder.

The combination of a new location and a new refrigerator has been "one of the best investments I have ever made," says Sheeder.

Here's the ANSWER to SMALL TONNAGE LIQUID CHILLER REQUIREMENTS



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Water In Corrosion--

(Continued from preceding page) insoluble scale under any conditions.

Water softeners must be used with caution. Even though no scale can be formed, "dead soft" waters are among the most corrosive waters known.

Most of the difficulties caused by water—both in corrosion and in scale formation—can be prevented by suitable water treatment, but this preventative is neglected by most servicemen. In some cases, of course, such preventive measures are not warranted.

SERVICEMAN MUST DECIDE

Only the serviceman can determine if it is more economical in individual cases to remove scale periodically or to prevent its formation; to eliminate the possibility of corrosion or take the chance that the corrosion products will form a protective coating and stop further corrosion.

It would be out of place here to go into detail about the various methods of water treatment and corrosion prevention, since qualified companies exist who can give the servicemen the information and material they need for specific applications. But the serviceman will better be able to judge the merits and needs for various actions if he knows the general principles behind the recommendations.

To soften hard water, several chemicals can be used. Well water is sometimes passed through gravel beds containing soda ash or borax, or even slaked lime. In each case the temporary hardness is removed as an insoluble scale before it gets to a place where it can cause trouble.

ION EXCHANGERS USE DIFFERENT PRINCIPLE

Water softeners of the zeolite or Dowex type—called ion exchangers—use a different principle to remove the calcium and magnesium from the water. In this case, the magnesium or calcium is actually exchanged for a harmless amount of sodium, which passes into the water. The sodium will form no

insoluble scale under any conditions.

Water softeners must be used with caution. Even though no scale can be formed, "dead soft" waters are among the most corrosive waters known.

It is usually recommended that a by-pass be used around the softener. The by-pass feeds a controlled amount of raw water, so that the final water has a few grains of hardness left. Water treatment companies will recommend minimum hardnesses in specific localities.

Since the refrigeration serviceman's responsibility frequently does not go beyond the supply valve to the refrigeration unit, he may not be called upon to engineer actual water softening installations. There are actions he can take on his side of the supply valve which will ease corrosion difficulties.

PREVENTIVE TREATMENT

Where it is warranted, very little manipulation is involved in preventive water treatment. The chemical, sometimes in bulk, sometimes in a can or drum is placed in the condenser pan or tower basin. The chemicals slowly dissolve and flow through the system. In a few instances, separate units which bleed in a metered amount of chemicals have been justified.

While treatments such as this do effect the nature of the water itself, their chief effect is to place protective coatings on metal surfacing and to keep any sludge or scale soft enough to be easily removed by blow-down and washout. Strictly speaking, some treatments do not actually prevent scale formation, but only prevent its build-up on pipe walls.

Since slime and algae tend to gather and grow on rough scale, these same chemicals have the effect of retarding green growth. There are, in addition, special chemicals designed to remove extensive green growth. The chemicals are added to the system as often as needed to solve the particular problem.

It is interesting to note that

in dealing with green growth, it is not advisable to use a constant or frequent preventive addition of chemicals, since the organisms tend to build up an immunity to a steady dose of chemicals, just as the common housefly built up a resistance to the powerful DDT.

If treatment to prevent scale is uneconomical or inconvenient, the next best action is periodic cleaning of condenser systems before they begin to build up excessive head pressures and overload the system.

Further, it is much easier and more economical to remove scale periodically by adding chemicals, than to wait then have to shut down and manually clean the system.

There exist, of course, many premium metals which are extremely corrosion resistant. Such metals as stainless steel, monel, and iconel are examples. And there are extremely effective protective coatings which can be applied to metals.

While of practical use to certain industries, such premium measures are out of the question for practical refrigeration applications — for reasons of cost or engineering.

SUMMARY

In these five articles on corrosion, we have studied, without becoming too technical, the basic mechanics of corrosion.

We have seen that corrosion can proceed by direct chemical attack, as when copper is dissolved off a tube, then later plated on a steel bearing.

We saw that corrosion can proceed by galvanic action—the passage of an electric current between two unlike metals in electrical contact with each other. While the possibility of such attack exists whenever such couples as copper-iron, aluminum-copper, or steel-aluminum are formed, refrigeration uses of such couples is such that galvanic corrosion is not a common problem.

Even when no unlike metals are in contact with each other, it is possible for electrical current to flow between exposed metal surfaces and broken coatings of oxide or corrosion prod-



AN EXAMPLE of how scale builds up due to both hard water and corrosion.

ucts. When electrolysis such as this occurs, the exposed metal dissolves—usually in small areas resulting in pinholes.

Water, involved either directly or indirectly in most corrosion, can be treated to reduce its chemical aggressiveness or it can be used to carry protective coatings to metal surfaces.

Unchecked, corrosion can cause mechanical and electrical failures. The serviceman who is aware of the basic principles and various mechanisms of corrosion can often determine the

actual cause of a service breakdown and correct the basic difficulty, rather than treating the after effects.

Such knowledge is another valuable tool for the refrigeration serviceman, who to perform his function effectively, must be familiar with the principles of several trades and professions.

A following article will use some of the knowledge about corrosion in evaluating for refrigeration uses the various types of plastic pipes used.

(To Be Continued)

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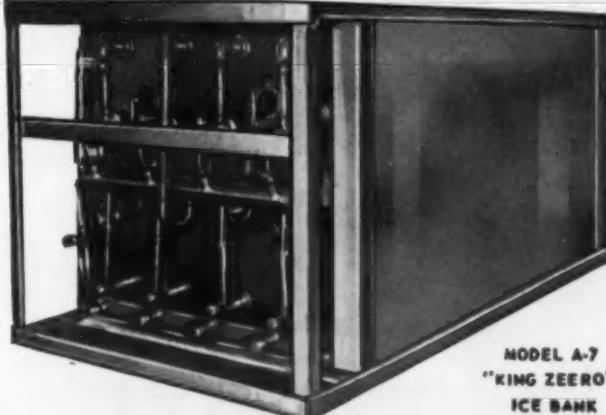
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What's Going On in HEATING

News of Methods, Products, People

Furnace Manufacturer 'Mends Own Fences' In Drive To Upgrade Dealers and Sales

MILWAUKEE—"There is no conceivable reason why our industry cannot sell 2½ million furnaces in 1958," contends Frank J. Nunlist, executive vice president of Mueller Climatrol Div., Worthington Corp.

"With 50 million dwelling units in this country, one furnace for each 20 homes would provide this volume without a single new residential structure being erected," Nunlist said at a Chicago press conference.

'SAD COMMENTARY'

"Yet, we know that a million dwelling units is a bare minimum for our industry. The fact that we only sold a few hundred thousand furnaces in the modernization market in each of the last several years is a sad commentary on our woeful lack of consumer recognition and on our own public relations and merchandising abilities."

At the present rate of modernization sales it will take 50 years to replace the automatic, central heating installations that now exist in single-family dwellings, he said.

The manufacturers of this industry have criticized the dealers for waiting on the market—yet, we have been guilty of the selfsame mortal sin. Mueller Climatrol will no longer wait!" Nunlist declared.

BROAD PROGRAM

Mueller Climatrol, Milwaukee manufacturer of year-round indoor air conditioning equipment, has undertaken a broad program of dealer re-education and self-examination, he revealed. The program was instigated after

company officials began a full study of its own company problems and then began developing a program to solve them.

"Smugness," he said, "may well sound the death knell for the industry, as we know it today, unless something drastic is done. The average heating and cooling dealer is way behind the times. He is attempting to use sales methods that were part of the pre-war economy, ignoring the tremendous change in merchandising and advertising techniques which now guide public acceptance."

'BIG COOLING GROWTH'

Moreover, the air conditioning market has reared its head and seems assured of a tremendous growth. One industry official has predicted there will be 10 million centrally air conditioned homes in the next five years alone," Nunlist commented.

"The ability to handle this tremendous market is already in the heating and cooling dealer's hands. He has the warehousing facilities, the trucks, the tools. He has the mechanically trained personnel to do the job. He understands piping and ductwork, and installation engineering.

"More than that, he has a better knowledge of the techniques of in-the-home selling than any other dealer group. He has a background of experience in domestic financing. Above all, he has learned to live with the demands of domestic service and its peculiarities.

"But, despite this, the average heating and cooling dealer

has failed to combine the tools he already has with the modern attack weapons that he needs.

"The tragedy is that unless the furnace dealer aggressively takes over the cooling installation business, he will find himself out of the heating business as well," Nunlist warned.

"Some manufacturers, pressured by the high investment in product manufacture and needing output to keep their costs competitive, may well be forced to turn to the fast-pitch appliance dealer, accepting his method of merchandising and tailoring the products to his needs.

"This could create havoc for the whole industry. For there is much more sold and purchased than a heating and cooling plant in itself. The consumer is also purchasing comfort, health, and engineered installations. The consumer in our industry is purchasing a product tailored for satisfactory service fitting his own particular needs.

"The continuing growth in grief brought to the heating and air conditioning market by the manipulations of today's appliance merchandisers is familiar to us all. The appliance dealer sells products which he can put out of the case and plug into the wall. He seldom has the organization or the technical knowledge to properly handle our equipment.

HAS LEARNED TO SELL

"But, we must admit that the appliance dealer has certainly learned how to sell. Every merchandising avenue from sky-rocket displays to free whoop-lavian smorgasbord has been used in the dealer's sales' operations to drag in customers and make the cash register sing.

"The only reason a product is created," Nunlist said, "is to be put to use. Perfect products in warehouses never did any economic good. The industry manufacturers must have sales. Not one manufacturer I know of views the possibility of assault by the appliance merchandisers with any relish. But they do know that they must sell their products. And there are only two answers: the appliance hucksters, or education of its own dealer organization.

"The importance of protecting the collateral parts of each product sold—proper installation engineering, assurance of proper installation, fittings, ductwork, etc., make the course of dealer education most logical," he declared.

"So, a complete program of dealer evaluation and support was developed. Crash teams of sales consultants swept into different areas of the country, studying individual dealer operations to gain better understanding and to provide ammu-

nition for use by the entire Mueller Climatrol dealer net.

"Tests were run to show dealers the importance of a hard-hitting sales and promotion attack," Nunlist pointed out. "We achieved this by picking out one typical town. Working with the key dealer of the area, we developed and put into operation a sales and merchandising program that created sales and prospects in almost unbelievable number.

"Our own organization was tested. Engineering was studied to be sure that our products were giving the dealer that support needed," Nunlist asserted. "Our management program, our manufacturing operations were analyzed and bad practices corrected, to assure Mueller Climatrol having an economical operation that can provide units at the most economical cost to give the dealer a competitive priced product.

"Our own regional salesmen were given extensive psychological tests and, with these as guides, weaknesses in the individual salesman were spotted and corrected so that he, who represents and is Mueller Climatrol in his territory, could provide all-out support to the program.

"Dealer management problems were studied. The successful dealer must be a profit making dealer," Nunlist said. "A system of management guides were developed by the Mueller Climatrol organization. Moreover, to always keep on top of the problems, a dealer council, made up of representative dealers throughout America, has been set up and will be able to spot problems as they occur, or even before. We have done away with waiting in our office until someone tells us what is going on. We are going out and finding out for ourselves."

40 'Pilot City' Tests Will Show Dealers How To Up Sales

CHICAGO—A plan to set up 40 pilot city operations in strategic cities throughout the United States to show dealers how to advertise, merchandise, and sell furnaces and summer air conditioning equipment was outlined at a press conference here by H. P. Mueller, Jr., vice president in charge of sales for Mueller-Climatrol, Milwaukee.

"The present state of instability throughout the heating and cooling industry is based on the problems of merchandising and selling," Mueller said. "Dealer organizations, for the most part, have taken little action to use modern merchandising and selling means to get their products into use.

"How critical this situation is was clearly spelled out in the du Pont survey which showed that 80% of the homeowners who have central air conditioning systems had to call in the dealer. They bought, but weren't sold," Mueller pointed out.

"How many millions of less aggressive home builders there must be in this country who would now be living in a year-round healthful indoor atmosphere if our dealers had made an aggressive selling attack.

"Mueller Climatrol means to find out. The pilot cities, located throughout the United States will give practical histories of how to merchandise and sell. The individual dealers who participate and their profits and sales records will give graphic results of the success of such a 'sell modern' approach," he said.

"Mueller Climatrol is not doing this as a hopeful experiment," Mueller reported. "This is the second stage of a program which began with the 'Test City' study made in Indiana last year. In that campaign the dealer increased his net profit 40%, and almost doubled his business volume in a one year period.

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NEW heavy duty YEATS dollies handles BIG, cumbersome units amazingly easy! you ROLL - instead of lift it!

Ends backbreaking work handling big heating plants, air conditioners, water heaters, etc.

SAVES time doing it!

Now—with this big, new dolly, ONE MAN can do the work of two or three, with even less effort. Specially designed for handling big, cumbersome equipment, this new Yeats dolly has such added features as two straps and ratchets, and two sets of wheels for rolling instead of lifting the load. Like all Yeats dollies, this big new model is so well balanced that ONE man can easily raise or lower a heavy unit. Its tough, featherlight aluminum alloy frame is completely padded in front . . . has smooth runners in back for easy on-off truck handling.

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Big heavy units are easily rolled-controlled by ONE man. Foot pressure on one end of the balanced design frame, permits hamper to "run" the dolly on rear edges without lifting the unit.

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For more information about products advertised on this page use Information Center, page 29.

Experts Offer Pointers on How To Figure Residential Heating, Conditioning Jobs

EAST LANSING, Mich.—Some practical pointers in figuring residential air conditioning and heating jobs were brought out in "bull sessions" between heating dealers and their instructors at a Forced Warm Air Conference held at Michigan State University recently.

The dealers asked the questions and the instructors—mainly engineers and sales engineers for prominent manufacturing firms—offered their opinions and answers.

Here are some of the questions and their answers:

(Q.) Is there anything to be gained by using two thermostats?

(A.) Ross Wallis, Meyer Furnace Co., answered that there was no advantage, except, as one contractor mentioned; putting the thermostat in an inaccessible place and mounting a "dummy" thermostat on a wall to eliminate tampering.

(Q.) What about resistance of dampers in ducts, when figuring duct resistance?

(A.) Wallis: Not important, except when dampers are partially closed; that, of course, will be after the installation is made.

(Q.) A house built with an open beam ceiling had an accumulation of moisture in the rafters that would drip down on the furniture. Can you give an explanation of that and a possible cure?

(A.) Wallis theorized that



it was possible that the vapor barrier had been installed on the roof side of the insulation, instead of room side. Since vapor escapes through the roof, in this case the vapor may have been trapped in the insulation, accumulating and freezing.

When the room or roof warmed up a little, the moisture melted and dripped. Vapor barriers, he stated should always be on the room side of the insulation.

(Q.) Is there a limit to the effective length of a baseboard heating diffuser?

(A.) Prof. Loren D. Miller, retired dean of mechanical engineering at Michigan State, currently a consulting engineer, who, with Prof. Charles Pesterfield, of MSU, had done considerable research on baseboard diffusers at one time, commented that baseboard diffusers should never be longer than 2 ft.

The main delivery from longer diffusers is from the center and the ends. A diffuser longer than 2 ft. offers high resistance that the system may not be able to handle properly. If a longer diffuser is needed, use extra 2-ft. lengths with separate pipes to each.

Miller recommended floor diffusers, stating that if he could not sell the customer floor diffusers, he would try to sell him wall diffusers.

He voiced the opinion that in a perimeter system a jet of air doesn't have to flow vertically. It can come out from the wall at an angle and still blanket the wall. An angle of 15° to 30° is acceptable, he said, so long as the stream of air doesn't hit anybody.

(Q.) Is there any rule general for selecting a coil?

(A.) L. A. Childs of Aerofin Corp.: There is no general rule. Coils should be selected for a particular job from the manufacturer's catalog, on the basis of specifications given for cooling and c.f.m. capacity. They

are selected generally from force of habit for velocity of 500 f.p.m.

(Q.) What is the best location for return air registers, particularly a central return register?

(A.) C. L. Grandstaff, C. A. Olsen Mfg. Co.: The return air grille doesn't have to be in the living room. It can be in a hallway or bedroom.

In a small home with central return, relief grilles should be placed over bedroom doors. To compute the free area of the grille, divide the c.f.m. handled by 2.

He advised contractors to figure the same c.f.m. capacity for the return system as for the supply side.

(Q.) In a ranch house, 100 to 150 ft. long, is zoning satisfactory?

(A.) Grandstaff suggested two furnaces, with zoning as second best, using separate blowers for each zone.

(Q.) Is the maximum static pressure for residential heating limited to .2 in.?

(A.) Grandstaff stated that a maximum of .25 in. static pressure was permissible with a larger blower motor, but "you have to be careful of velocity noise in the short ducts."

(Q.) Is it necessary to heat the crawl space in a home?

(A.) Miller: The only way to get warm floors is to heat the crawl space. The crawl space might as well be heated anyway, he said, because the heat loss through the floor has to be taken care of one way or another.

(Q.) Is there an anti-freeze that is non-corrosive to galvanizing?

(A.) Ward Brundage, president of the Brundage Co., said he didn't believe the ordinary ethylene-glycol anti-freezes were detrimental to galvanized surfaces.

(Q.) Is it true that fresh air

is easier to heat than stale air?

(A.) Miller expressed belief that there was no difference.

He added, however, that you lose residual heat by opening windows to get fresh air.

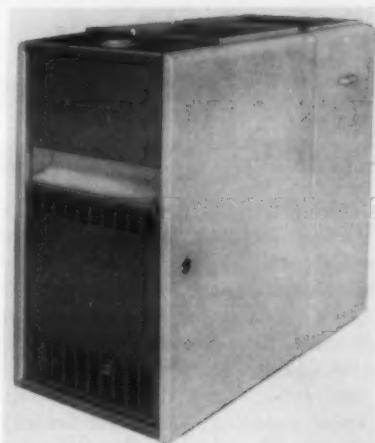
(Q.) Is it practical to use variable blower speeds to increase the capacity of a blower when more air is needed for cooling?

(A.) Grandstaff stated that it might be all right where ducts are near equal length, but on low speeds the short runs will be hot and the longer runs cold.

(Q.) Prof. Miller, would you care to comment on a ceiling perimeter heating system?

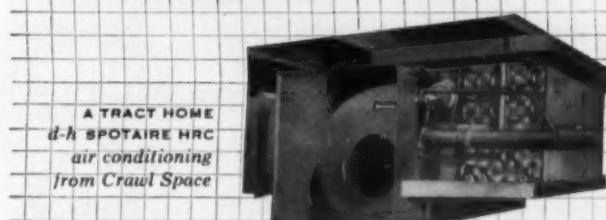
(A.) Miller replied that warm floors could not be expected with that type of system.

The questioner stated that he had installed heating where ceiling diffusers directed air downward, about 1 ft. in from the wall, and return air grilles were located on the inside walls. He claimed satisfactory results.



NEW Westinghouse Electric Corp. "Heat-Master" oil or gas-fired furnaces are designed for any type of installation in horizontal, counterflow, utility, and basement type models with two-tone charcoal and beige cabinets. There are 26 models with the line carrying a 10-year warranty on the heat exchanger and a year's warranty on the complete unit which can be adapted to air conditioning application with no modification needed.

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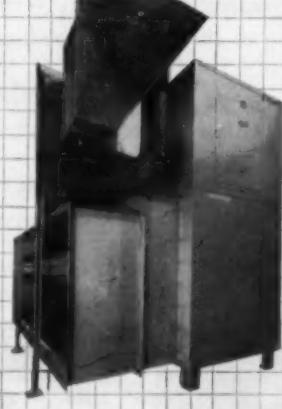


A TRACT HOME d-h SPOTAIR HRC air conditioning from Crawl Space

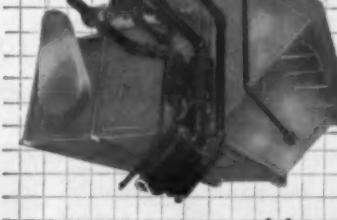


A NEW DEFENSE PLANT d-h AM heating and ventilating equipment

A 100-YEAR OLD CHURCH d-h HHV-Series air handling units



A 450-ROOM HOTEL d-h FZ multizone air conditioners



d-h system-type air conditioning

... 4 out of 7 complete lines in action — for any job.

Want the Full Story?

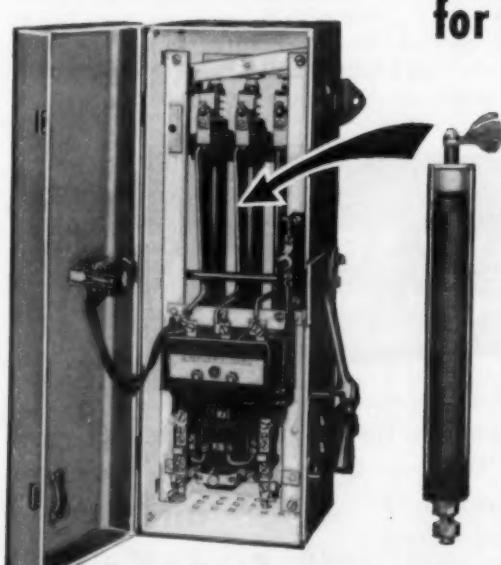


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Compressing the graphite discs reduces starting resistance steplessly

It can be done but—only with Allen-Bradley compression resistance starters. Excessive strains on gears, belts, pulleys, as well as on the driven unit are eliminated . . . thus assuring increased and trouble free equipment life. "Light flickering," when starting the compressor, cannot happen. You don't have to worry—the Allen-Bradley compression resistor type starters are acceptable to all power companies.

The Bulletin 640 manual starter is easy to operate . . . as the starting lever is gradually raised, the motor gradually comes up to speed. At full speed, line voltage is automatically applied without circuit interruption. The Bulletin 740 is the equivalent automatic starter.

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Bulletin 837 temperature control



Bulletin 836 pressure switch



ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

For more information about products advertised on this page use Information Center, page 29.

Weatherman Says

Select, Size Heating Systems by Average Design Figure Taken from Probabilities on Weather Frequency Curve

CHICAGO—Development of lecting new winter outside design revised winter outside design temperatures, for use in selection and sizing of heating systems, which would give more flexibility to those designing and installing such systems, was outlined before the recent convention of the American Society of Heating & Air Conditioning Engineers.

The proposed method of se-

lecting new winter outside design values, as explained by H. C. S. Thom of the U. S. Weather Bureau, is that the main contingency in the design of heating systems arises from the variability of the outdoor conditions.

This must be handled by climatological analysis, Thom said, and thus the design tem-

peratures selected would be on

I-B-R Baseboard Radiation Testing, Rating Code Innovates Check Testing

NEW YORK CITY—Third edition of the I-B-R "Testing and Rating Code for Baseboard Radiation" has been published by The Institute of Boiler & Radiator Mfrs., it was announced recently.

The edition includes an innovation in a provision of check testing at the new I-B-R laboratory in Urbana, Ill. It replaces earlier editions entirely, although essential requirements for testing I-B-R baseboard ratings have been retained.

One section of the code provides for check testing of ratings already in effect.

According to I-B-R General Manager Robert E. Ferry, original tests are conducted under

the code by the manufacturer in his laboratory or a laboratory of his choice. Test data, accompanied by photographs and detailed drawings, are then reviewed together with the results of check testing at the I-B-R Laboratory. A Baseboard Rating Committee studies all test findings and approves ratings if warranted.

Ferry also reported that construction of the new test lab in Urbana has been completed. Purpose of the lab, he noted, is not to conduct original tests for manufacturers, but to supply supplementary and check test information on baseboard radiation which is to carry I-B-R ratings.

Point of this is that the design engineer could thus apply these variable figures to certain situations. In a large building, with a certain amount of heat storage, it could well be that the high figure among the five could be used.

For a hospital, to assure proper heating at all times, a figure lower than average might be used.

In a great many localities, the average or central design temperature developed by this system would correspond for the design temperature prescribed by The ASHAE Guide. This was not universally true, however, and Thom said that

"There are a number of striking examples of bias in the present design temperatures. The Guide shows the same design temperature—0° F.—for Washington, D. C., Philadelphia, New York, and Boston. This appears strange when the variation in climate is considered."

"The proposed central design values place these in proper climatic order: Washington—10° F.; Philadelphia—6° F.; New York—5°; Boston—0° F."

Main points brought out in the discussion were these:

In structures of light construction, or those not heated 24 hours a day, it might be advisable to use the low figure.

Is there a possibility that any table of design temperatures with 5 variants would become an element in bid shopping of jobs and a general downgrading of all design estimates.

The general feeling was expressed that currently used design temperatures in the southern part of the country are not in accord with reality, being too low, and that this is a factor in view of competition from new methods of heating, such as electric heat.



The Serviceman Is a Lady

SCORING a first for her sex and for Janitrol Div., Surface Combustion Corp. was Mrs. Anne Tomlinson of Atlanta who recently attended a Janitrol service school as service manager for Delta Heating Co.

Mother Named Atlanta Heating, Cooling Dealer's Service Manager; Attends School

COLUMBUS, Ohio—Look out men! The ladies are moving in on what, till very recently, has been 100% male territory. Namely, heating and air conditioning service work.

Leader of this revolution over male superiority is pretty Anne Carolyn Tomlinson from Atlanta, Ga., suh! Anne scored a first for her sex and for Janitrol recently when she came north to attend a Janitrol heating and air conditioning service school at Janitrol Div., Surface Combustion Corp. here.

Anne, who is a Mrs. by the way, and has two boys, age 8 and 3, is employed by Delta Heating Co., 445 W. Peachtree St., Atlanta.

After displaying far more than feminine interest in her work, and devoting many overtime hours to the business, she was appointed service manager, and directs four men.

Her job and her children, she'll have you know are her main interests. And when time permits in her busy schedule, she likes to do a little oil painting or go fishing.

When asked for her impressions about the Janitrol service schools, Anne said: "Very good. This school is interesting and informative, and has been very helpful. The manner and instruction is very good."

How about it men? Anybody for dishwashing?

Remen To Explain 'Comfort' To Los Angeles Rotary May 9

LOS ANGELES—Ing Remen, vice president and general manager, Lennox Industries, Inc., will speak on air conditioning for human comfort before a Rotary Club audience composed of many of UCLA faculty members at the weekly meeting of the West Los Angeles club Thursday, May 9.

He will appear as member of the speaker's bureau of the Institute of Heating & Air Conditioning Industries.

Remen will also disclose plans for a U. S. conference on indoor climate control which the institute will hold jointly with UCLA in September.

Simpson TEST EQUIPMENT

speeds up servicing of { **REFRIGERATION**
AIR CONDITIONING
HEATING EQUIPMENT
APPLIANCES

CHECKS 3 TEMPERATURES AT ONE TIME

THERM-O-METER, Model 388-3L (-50° to +1000° F.)

Takes up to three, 7½' thermocouple leads, general purpose or surface type. Self shielded. With one general purpose lead, battery, and \$64.50 operator's manual.....

Model 388 for one lead only.....\$59.50



TEMPERATURE METER, Model 385-3L (-50° to +70° F.)

Developed for refrigeration equipment. Takes up to three, 15' general purpose Thermistor tipped leads. With one lead and manual....\$33.95

Model 385 for one lead only.....\$30.00

PRETESTS CURRENT CAPACITY OF ELECTRICAL LINES

LINE-O-METER, Model 397

Tells whether existing house wiring is adequate for motor starting currents from 13 to 50 amperes. (Single phase, 117 V, 60 cycles)....\$29.95

DIAGNOSES MOST ELECTRICAL TROUBLES

AC VOLT-AMP-WATTMETER, Model 390

Checks line voltage, current drain, and power consumption. Four wattage ranges cover practically any appliance. With break-in plug, leads, and manual.....\$43.95

CHECKS VOLTAGE AND POWER SIMULTANEOUSLY

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For appliance motor testing. \$34.95

Model 391, 3000 watts.....

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and
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Winter Air Conditioning Fundamentals

4. Starting Up New Installations

By H. C. Gurney, Janitrol Div., Surface Combustion Corp.

There are a number of adjustments or inspections that are required in putting a new winter conditioner into operation for the first time if the customer is to derive the maximum benefit from the new heating plant.

There are important advantages to the dealer who carefully makes these adjustments. Word of mouth advertising of the well satisfied and enthusiastic user has a very favorable effect on future sales. Also the number of service calls will be substantially reduced during the first year when the dealer generally provides free service.

MANY VARIABLES

When the conditioner is manufactured there are many variables concerning the final use of the unit that are not known and therefore the adjustments can not be made correctly at the factory. Several of the variables are in the gas—its heating value (B.t.u./cu. ft.), specific gravity, burning characteristics and the supply pressure at the conditioner.

A number of other variables are in regard to the distribution system—its resistance, the type of registers (straight or directional discharge) and register location (baseboard, high sidewall).

EFFECT OF VIBRATION IN SHIPMENT MUST BE TAKEN CARE OF

In addition to the things that vary in the final use of the unit, the effect of vibration in shipment must be taken care of by adjustment and inspection on the job.

Proper adjustment in starting a new conditioner will insure the best operation on the particular gas, that the safety features are functioning and that

the maximum in comfort will be delivered.

Comfort is really what the customer buys, or tries to buy, whether or not he uses the term at the time of purchase. A very high degree of comfort can be obtained from a forced warm air heating system. This high degree of comfort is not achieved always because of lack of attention at the time the unit is put into operation.

Because of the prevalence of this situation and the unfavorable comments it gave rise to, the National Warm Air Heating and Air Conditioning Association started a program several years ago to correct this situation.

A study was made of the best way to make those adjustments that affect comfort and instructions on correct procedures were developed. These principles and procedures are now commonly known as CAC (Continuous Air Circulation).

NECESSARY ADJUSTMENT LISTED

In the following paragraphs the adjustments that should be made when starting a new conditioner are given, including the CAC adjustments.

Pilot Flame Length—Adjust screw in adjustable pilot cock so that tip of ignition flame reaches center of adjacent burner heads. (Make this adjustment before timing pilot).

Pilot Timing—Allow pilot to heat at least five minutes, then adjust switch rod to break contact in 60 to 90 seconds after pilot flame is extinguished.

Gas Input (CAC)—On all city gases and LP Gas-air mixtures, adjust the main burner gas pressure regulator for the correct gas input either by timing the test dial on the meter or checking manifold pressure.

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WRITE . . .



Gentlemen: Please rush
FACTS & CASE HISTORIES ABOUT UNCRATED SHIPPING.

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CITY _____ STATE _____



Refer to the manifold pressure tables accompanying the unit. On butane or propane the manifold pressure must be 11 in. of water.

PRIMARY AIR

Primary Air—The correct adjustment for ribbon burners is considerably sharper than for drilled port burners. Therefore, follow carefully the procedure given and do not adjust as for drilled port burners.

On city gases the top outline of the primary cone (inside portion of the flame), on a ribbon burner is somewhat irregular, giving it a saw tooth appearance. Adjust the primary air shutter so this primary cone height is $\frac{1}{4}$ to $\frac{1}{2}$ in. high.

On LP gases start with primary air shutter wide open. Note that there is an individual primary cone on each burner port. The primary cone color may be purple or have a purple cast or may be green. The cone is approximately $\frac{1}{16}$ to $\frac{1}{8}$ in. high.

When the cones are purple, or have a purple cast, close the air shutter slowly until the color changes to a definite green as the primary cone increases slightly in height.

When the cones are green, and of uniform height, with the air shutter wide open, no further air shutter adjustment should be made. If some individual cones are appreciably higher than others, or if some of the cone tips fade out, or if there is yellow in the flame, the air shutters are too far closed. Repeat the adjustment until current conditions are obtained.

FAN CONTROL

Fan Control (CAC)—Make final adjustment after blower speed adjustment is made. The fan control should be adjusted for the greatest degree of comfort. This is obtained with a minimum differential and with the "OFF" setting as low as possible without the occupants experiencing a feeling of cold air.

This may be as low as 85 to 90° F. at the register, and will vary with register location and type of register.

Limit Control (CAC)—The limit control must be set to shut the burners off at 200° F. and to bring them back on at 175° F. (On some limit controls the differential is fixed).

End Play—Inspect blower shaft for end play. To remove end play loosen set screw in thrust collar adjacent to bearing. Slide shaft to opposite side as far as it will go then place thrust collar against bearing. Secure thrust collar with set screw.

PULLEY ALIGNMENT

Pulley Alignment—The motor drive pulley and the driven pulley attached to the blower shaft must be aligned by shifting the position of the motor drive pulley on the motor shaft, or by shifting the motor on the motor support.

Belt Tension—Check tension of belt by applying pressure with one finger on the belt halfway between the pulleys. Under this condition the belt should have enough slack to permit it to depress approximately 1 in. from its normal position.

Belt tension can be adjusted

Harry C. Gurney, who directs sales for Janitrol, has spent his entire business career in the heating industry, and has had a part in the evolution of all the improvements that are accepted as standard today.

The author has stated that he will answer such questions (where an answer is possible) as may be directed to him by readers.

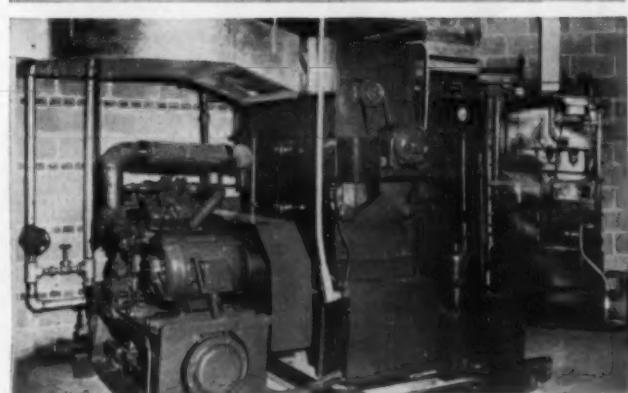
by loosening screws attaching rise spread the motor pulley halves by screwing them away from each other; to decrease the temperature rise lessen the over-all spread of the pulley halves.

Balancing (CAC)—Use a thermometer in each room (two in large rooms) and start with dampers wide open. Gradually close dampers in supply runs to rooms which are too warm until uniform temperature readings are obtained.

Balance returns if drafts at floor level are encountered. This is done by cutting down returns toward which there is excessive air movement.

(To Be Continued)

DRY AIR... PRECISELY as you want it



NIAGARA CONTROLLED HUMIDITY AIR CONDITIONING

This method removes moisture from air by contact with a liquid in a small spray chamber. The liquid spray contact temperature and the absorbent concentration, factors that are easily and positively controlled, determine exactly the amount of moisture remaining in the leaving air. Heating or cooling is done as a separate function.

The Niagara's Controlled Humidity Method using HYGROL moisture-absorbent liquid is

Best and most effective because . . . it removes moisture as a separate function from cooling or heating and so gives a precise result constantly and always. Niagara machines using liquid contact means of drying air have given over 20 years of service.

Most reliable because . . . the absorbent is continuously concentrated automatically. No moisture-sensitive instruments are required to control your conditions.

Most flexible because . . . you can obtain any condition at will and hold it as long as you wish in either continuous production, testing or storage.

Easiest to take care of because . . . the apparatus is simple, parts are accessible, controls are trustworthy.

Most compact, taking less space for installation.

Inexpensive to operate because . . . no re-heat is needed to obtain the relative humidity you wish in normal temperature ranges and frequently no refrigeration is used to remove moisture.

The cleanest because . . . no solids, salts or solutions of solids are used and there are no corrosive or reactive substances.

Write for full information; ask for Bulletins
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Expert Speakers 'Keep Interest High' at RSES Calif. Educational Forum

ARW Urges Pacific Southwest RSES To Join Servicing, Safety Film Competition

SAN FRANCISCO — Better than expected attendance, plus able speakers expert in their subjects, kept interest high throughout the recent regional three-day Refrigeration Service Engineers Society educational forum here.

Charles G. Bell of Fresno, president of the RSES association of chapters in Arizona, California, Nevada, and Utah, welcomed the service engineers, who heard George A. Schnier, representing Air-Conditioning & Refrigeration Institute and its managing director, George S. Jones, Jr., state that "these meetings are important. On behalf of ARI, I am happy to say we will continue to work with RSES." Schnier is sales man-

ager for American Potash & Chemical Co., member of ARI.

Arrangement of most of the forum program was by RSES educational director Paul B. Reed, ill at home in Milwaukee, and unable to attend.

Acting educational director John H. Spence of St. Louis, service manager for Hussmann Refrigeration, Inc., presented the program, made informative interpolations, and introduced speakers.

Irving J. Fajans of New York City, president of Air Conditioning & Refrigeration Wholesalers, told the forum: "We of ARW are out to promote educational aspects of the industry and RSES."

"ARW has recently sponsored a film library contest, offering \$2,000 in four prizes for educational films on servicing and safety," Fajans said.

He urged the Pacific southwest region of RSES to join the competition, and asked the regional association, and the chapters, to contact local ARW member wholesalers, or write A. Starr Hull, executive secretary of ARW, 1200 W. Fifth Ave., Columbus, Ohio, for information.

"Information please" was the daily feature that started the program Friday, Saturday, and Sunday mornings. Questions raised were closely followed, with members of the forum audience taking the floor microphone to help in getting the best answer.

MOTOR PROBLEMS WHEN VOLTAGE ISN'T KEPT UP

Sunday morning's "Information please" featured Arthur Dietz of the panel who took up electrical power circuit arrangements and motor problems that arise when voltage is not maintained. Dietz has the Electric Service Shop at Vacaville, Calif.

This problem created such interest it took all the time allotted. Among those in the audience who contributed valuable experience in explanation of how best to handle circuit and load problems, was A. E. Johansen, supervisor of public works, electrical and refrigeration shop, at El Toro Marine Corps base near Santa Ana, Calif.

Showing the industry where sales effort should be concentrated was the well prepared du Pont survey on central residential air conditioning, of special value because the survey included three areas in Arizona and California, including the Bay area.

Samuel N. Seely gave the presentation, with members of his sales staff. Seely is western district manager for du Pont's "Freon" products division.

Du Pont distributed advance copies of AIR CONDITIONING & REFRIGERATION NEWS, sent by air from Detroit, and placed on each copy a folder calling attention to their new Pacific coast "Freon" plant at Anitoch, Calif., in the Bay area.

"Electric distribution problems" was the topic of E. V. Lathrop of Freano, commercial



NEW OFFICERS and directors of RSES association for states of Arizona, California, Nevada, and Utah, take the oath at banquet during educational forum in San Francisco.

department assistant manager for the Pacific Gas & Electric Co. Lathrop said PG&E has a customers' advisory service that analyzes loads over a two-year period when recommending the most economical circuit arrangement.

From the floor came a request for the answer to the problem posed by following advice of a PG&E engineer to use a four-wire three-phase circuit arrangement for over-all economy for the customer, only to find a single-phase circuit would have been best and would have cost the customer only one-third as much.

Lathrop replied that three-phase service would have to be on a separate meter from single-phase service.

AIR PROBLEMS COVERED

"Air problems in air conditioning systems," by George Hase of Milwaukee had close attention of a capacity audience Friday afternoon. Layout of ducts in various situations, location of grilles, and regulation of dampers and controls were explained by Hase, sales manager of Mueller Climatrol Div. of Worthington Corp.

A penetrating but valuable discussion of "refrigeration service and the supermarket," was presented by Abe S. Miller of Littleman Stores, San Francisco, an independent chain. Miller discussed several matters in connection with work done for stores by refrigeration servicemen that provokes the market operator.

Willis Stafford presented "automobile air conditioning" to an interested crowd Friday night, using a television camera circuit, and a reflex unit that projected illustrations on the screen.

Stafford urged refrigeration servicemen to get into auto air conditioning, paint up sales quarters, equip themselves with wiring diagrams and service information.

He recommended the book "Servicing Automobile Air Conditioners" published by AIR CONDITIONING & REFRIGERATION NEWS, and said much of the material for his talk came from that book. Stafford is wholesale sales representative for Detroit Controls.

"How to Service Cooling Towers and Evaporative Condensers" was the topic of Robert H. Savage of Water Chemists, Inc., Los Angeles.

In response to a question, Savage said if spray patterns do not cover all spots in an evaporative condenser, it is necessary to get more spray nozzles.

If scale forms when the unit is shut down, Savage said the problem can be solved by using

enough phosphate, enough scale remover, and enough bleed.

Using colored slides, W. H.

Krack of St. Louis, sales manager for Sporan Valve Co., talked on "Shootin' Service." He explained carrying capacity of refrigeration lines in tons of refrigeration for installations in relation to pipe lengths and number of fittings.

DISCUSSES REFRIGERANT-22

Refrigerant-22 was thoroughly discussed by John Bopp, manager of refrigerant sales in the development department of new products division, Ansul Chemical Co.

Bopp said the problems have been pretty well met now, but when first introduced manufacturers grabbed R-22 and ran with the ball before field problems, such as corrosion problems, were recognized, and before it was understood R-22 had

totally different properties from R-12.

Dan D. Wile, executive vice president and chief engineer of Recold Corp., Los Angeles, had an enthusiastic response to his presentation on "installation and servicing of remote condensers."

Wile urged selection of a compressor for maximum load, rather than for design load. He also urged selection of a discharge line size for the actual refrigeration load, not for the compressor discharge valve size.

Charles Q. Livingston of Lancaster, Penn., technical sales-service for Insulation Div. of Armstrong Cork Co., gave an excellent discussion, explaining the limitations of "k" factors, the vexatious condensation problem, use of tubing insulation now available in colors applied over cork covering on cold lines, and other new products.

*in how many combinations
do manufacturers use*

SUPER-FLO FILTER-DRIERS?

Available with SAE flare or sweat connections in brass or steel thru 20 tons.

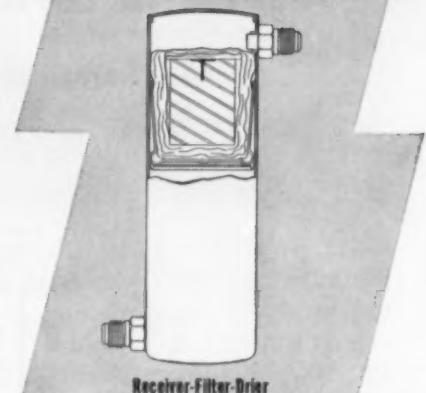


More than 100 manufacturers specify Super-Flo Filter-Driers as original equipment, often combined with some other Remco component.

The manufacturer rush to Remco Super-Flo began as a result of . . . low cost . . . massive depth filtering to remove foreign particles . . . peak drying efficiency at liquid line temperatures through 150°F . . . acid control . . . and no measurable pressure drop!

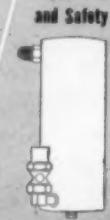
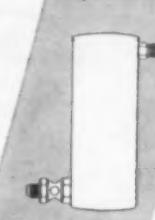
The U/L approved steel shell makes a fine receiver. With it can be combined a Remco Liquid Indicator . . . Check Valve . . . or Safety Device.

All Super-Flo Filter-Driers and combinations are tested, dehydrated and moisture-vapor sealed for your protection. Write for low net prices and Bulletin R-11 for details.



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STANDARD



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Trade-Mark

Halide Leak Detector

. . . reacts instantly with pin-point accuracy

Here's a leak detector that is especially designed to speed the location of halide refrigerant gas leaks that are too small to detect with soapy water. Available to servicemen and engineers in two handy kits.

The B Tank Outfit is particularly useful where testing space is limited. The leak detector is connected to the acetylene fuel tank by means of an extra long hose to enable you to reach into corners or between pipes while you leave the tank outside. Instantly detects as little as 100 parts of halide gas in a million parts of air.

Smaller, lighter in weight, and even more compact, the MC Tank Outfit offers the same pin-point accuracy yet can be carried from job to job more easily.

Ask your nearby LINDE Jobber to demonstrate today. Or, if you wish further information, write: Linde Air Products Company, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Linde Air Products Company, Division of Union Carbide Canada Limited, Toronto.

Get it from your LINDE Jobber

The terms "Linde" and "Prest-O-Lite" are registered trade-marks of Union Carbide and Carbon Corporation.

What Happened In Cincinnati

1,042 Homes Air Conditioned In 1956 To Surpass 1955 by 25%; New Home Installations Total 538

(Concluded from Page 1)

lative builders dropped rather sharply in comparison.

Existing homes with 504 jobs in 1956 represented 48% of the market. In 1955 the existing home category with 359 known jobs accounted for an estimated 44% of the market.

New home installations made at the choice of the owner totaled 333 in 1956, or 32%. This was a sharp gain over the 200 some such installations in 1955, or about 25%.

Speculative builders, however, last year were represented with 205 installations for 20% of the jobs, in contrast to 1955 when their 241 jobs meant an estimated 31% of the total.

Obviously, the boom in the speculative building field that many contractors and distributors said they were expecting in 1956 didn't materialize. Biggest sales to builders were made by Contractor No. 1, who lists 45 in this category. One contractor in 1955 claimed 85 such installations.

As in the previous year's survey, the 1956 study indicated that a large number of year-round systems were being installed in Cincinnati homes. There were 572 such systems compared with 470 "cooling only" jobs in 1956. The 1955 survey listed 516 year-round systems and 284 "cooling only."

A check of the number of year-round jobs against those listed for new homes would indicate that a number of oil heating systems were replaced by year-round air conditioning units. With 572 year-round systems and 538 new homes air conditioned, then some units, at least, replaced old heating plants in existing homes.

Increasing dominance of air-cooled equipment is readily apparent in the 1956 survey of Cincinnati installations. These figures show that 804 of the 1,042 jobs were equipped with air-cooled condensers, or 77% of all jobs. The 238 water-cooled units represented 23%.

In the 1955 survey, air-cooled equipment was found in 57% of

Residential Air Conditioning In Cincinnati In 1956										
Contractor	1956		Exist-	Year-	Cool-	Sheet		Water	With	Metal
	Total	New Homes	Owner	Builder	Round	Only	Air Cooled	Water	With	Shop
1	50	....	45	5	45	5	50	....	....	No
2	48	32	....	16	32	16	42	6	....	Yes
3	35	20	10	5	30	5	30	....	5	Yes
4	32	2	20	10	32	....	7	....	25	Yes
5	31	10	....	21	10	21	30	....	1	Yes
6	27	6	10	11	20	7	24	....	3	Yes
7	23	....	....	23	6	17	19	4	....	No
8	23	8	....	15	8	15	22	....	1	Yes
9	15	3	....	12	6	9	15	....	....	Yes
10	13	1	....	12	3	10	4	4	5	No
11	10	1	....	9	1	9	6	....	4	No
12	8	....	3	5	8	....	8	....	....	Yes
13	7	1	....	6	1	6	7	....	....	Yes
14	6	....	....	6	....	6	3	....	3	Yes
15	5	....	....	5	....	5	5	....	....	Yes
16	3	....	....	3	....	3	....	3	3	Yes
17	2	....	....	2	....	2	....	....	....	No
18	2	2	....	....	2	....	2	....	....	No
Distributor										
A	203	90	11	102	100	103	83	5	115	85
B	90	....	40	50	40	50	80	....	10	10
C	75	15	25	35	45	30	51	....	24	....
D	66	20	6	40	26	40	66	....	....	....
E	62	20	20	22	40	22	60	....	2	2
F	50	20	10	20	30	20	42	....	8	8
G	45	42	3	....	45	....	42	....	3	3
H	39	12	....	27	12	27	34	....	5	5
I	35	20	....	15	20	15	15	....	20	....
J	18	6	....	12	6	12	11	6	1	1
K	8	....	2	6	2	6	8	....	....	....
L	6	....	....	6	....	6	6	....	....	....
M	4	2	....	2	2	2	4	....	....	....
N	1	....	....	1	....	1	1	....	....	....
Total	1,042	333	205	504	572	470	779	25	238	128

the jobs, water cooled in 43%.

Of the 804 air-cooled units installed in 1956, 779 were remote type systems and only 25 self-contained. The latter included a few heat pumps, by the way.

Just over half of the water-cooled installations in Cincinnati last year were equipped with cooling towers—128 out of 238. The same proportions held in 1955.

Data supplied by Cincinnati contractors and distributors shows that 24 different makes of residential air conditioners were represented in the 1956 installations. Of these 13 can be classified as "old line" air conditioning and refrigeration manufacturers or newer firms who've entered the central resi-

dential field after making window air conditioners. Eleven makes were those of "furnace" manufacturers.

The former are credited with 599 jobs, or 57% of the total, while the "furnace" makers are represented by 443 units, or 43%.

In 1955 11 air conditioning manufacturers obtained 63% of the total while nine furnace manufacturers obtained 37%. The same percentages prevailed in 1954.

Questioned about service problems with residential systems, most contractors and distributors reported very few.

"We may be lucky," said one, "but we have never had a bit of service trouble with them all."

While service was no problem for most of them, Cincinnati contractors and distributors are doing a lot of head-scratching about sales and profits.

"We had a new home show here a short time ago," recalls one distributor. "Activity there was the poorest in years. We are acclimated to a 10% drop in sales for this year. The air conditioning industry," claims this distributor, "has not learned how to merchandise their equipment yet. We have handled air conditioning for three years and have lost money every year."

"On the other hand," he continued, "we can make a good profit on heating. So this year we are not going to push air conditioning unless we can make some money. We realize air conditioning is the coming thing, but it should be able to be sold profitably."

But another distributor with a pretty good volume to his credit in 1956 declared: "We were just getting along last year. Come back again next year and we'll have a real story." Commented a contractor:

"Heating men are still just getting their feet wet in air conditioning. They don't know too much about it yet and are moving cautiously. They just put in a few jobs a year."

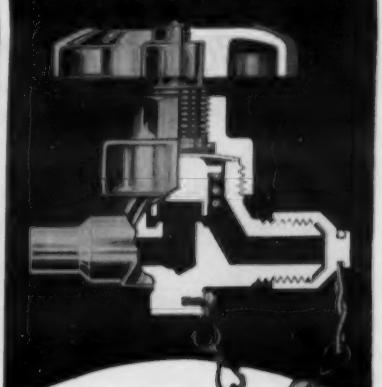
"1957 looks better than '56," one contractor stoutly believes.

One distributor, while discouraged over his experiences of the past two or three years in working through retailers, is still convinced of the inevitable boom in residential air conditioning, however. But this veteran wants to try time-tested specialty selling methods himself rather than depend on his dealers, he intimates.

One contractor with a respectable record of installations in 1956 expects to capitalize on installations of 50 cooling cabinets made in builder homes last year. "These cost about \$40 apiece, but last fall we had already added cooling to six of these homes," he said.

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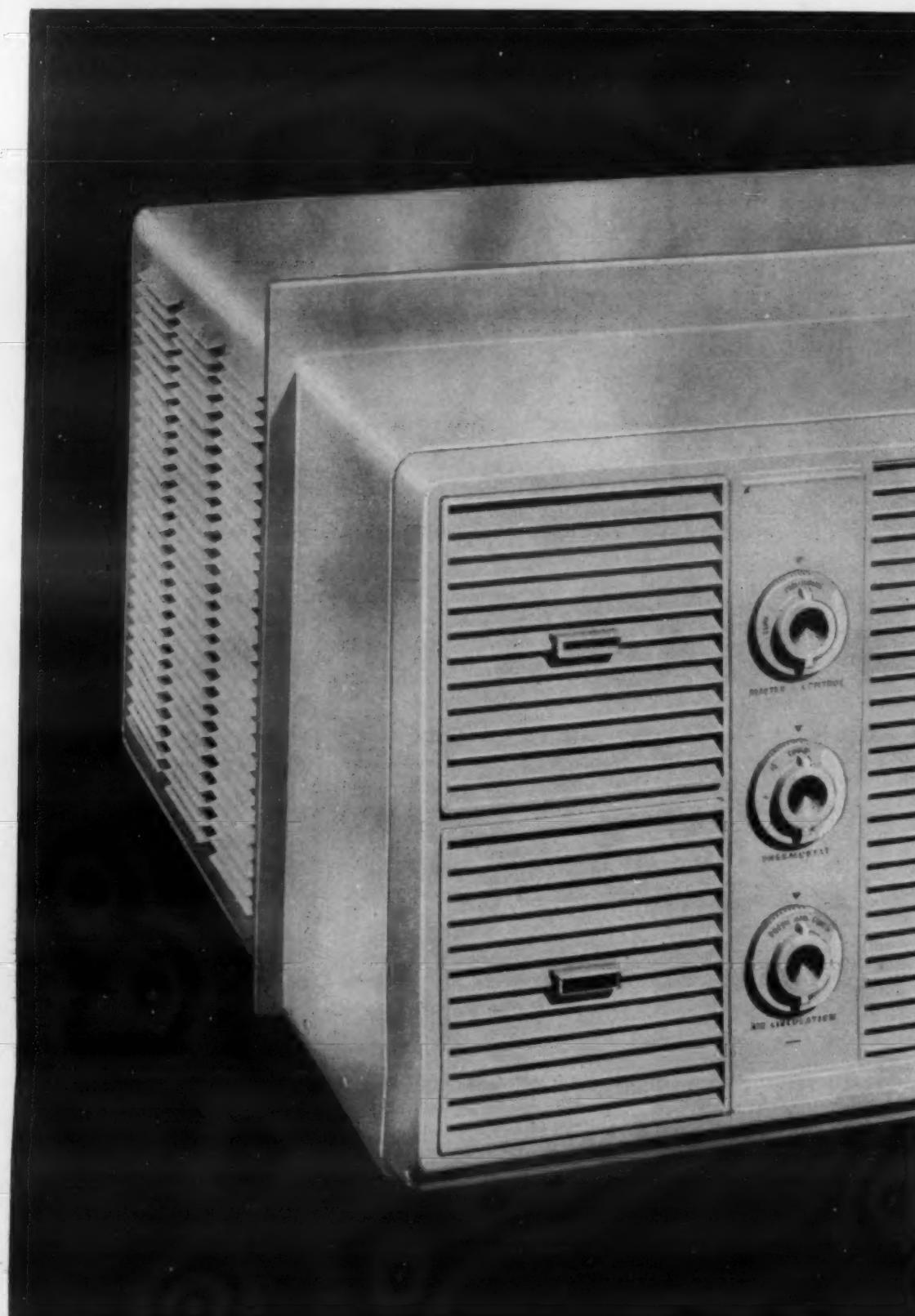
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try, these men turn to the NEWS every Monday morning for information that helps them sell! They find in the NEWS more than twice as much editorial material devoted to them and their problems as in any other publication in the field. Over the years, they have come to look upon the NEWS as a part of their business equally important as the tools and equipment they work with every day!

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DETROIT, 450 West Fort St., WOODWARD 2-0924, J. B. Sullivan.
LOS ANGELES, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon.

Firms' Sales, Profits Up In Quarter--

(Concluded from Page 1, Col. 2) pared to \$95 million at the end of last year.

Ranco, Inc. reported sales and earnings "moderately in excess" of those in the 1956 quarter. Net profit was \$783,409 and net sales were \$7,502,165. They were substantially better than fourth quarter, 1956, figures. A quarterly dividend of 30 cents per common share will be paid June 15 to holders of record May 24.

Controls Co. of America found net earnings up 24% over the opening quarter of 1956. After taxes, they were \$284,721 on sales totaling \$7,245,454. A dividend of 18½ cents per share will be paid July 1 to holders of record June 14.

"A strong demand for the company's heating, refrigeration, and air conditioning controls contributed to the earnings rise," said Louis Putze, president.

Worthington Corp. upped quarterly net income from \$1,790,038 last year to \$2,106,258.

Backlog of orders on March 31 exceeded \$101 million as com-

pared to \$95 million at the end of last year.

Trane Co. reports sales of \$18,631,203 and earnings of \$1,170,473, up slightly from the \$17,619,936 and \$1,149,622 reported last year.

General Electric Co. reported first-quarter sales and earnings at record levels. Sales hit \$1,048,900,000 and profits \$64 million.

Ralph J. Cordiner, president, said he expected 1957 sales to beat last year's \$4 billion record by 15%. But, he added, profit margins (they were about 6.1% of sales in the first quarter) need to be improved "if the country's leading companies are to continue to perform their function as leaders in research and advancing productivity."

He said labor costs have gone up 189% since 1939. Material costs have risen 159%, but G-E's prices have increased 65%.

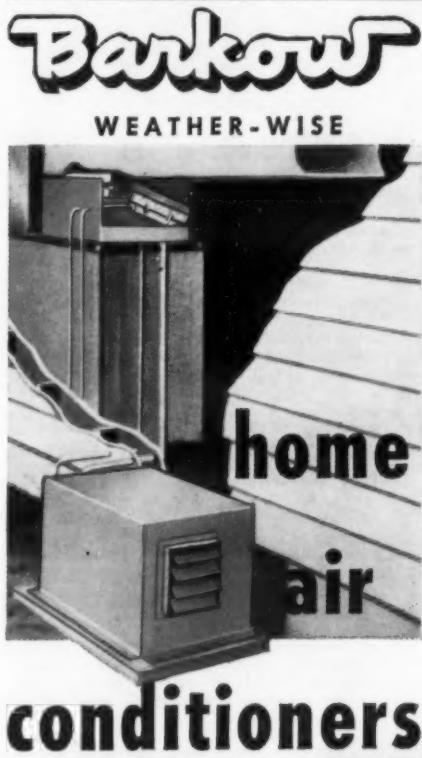
"No company," he asserted, "can absorb so much cost increase in so few years and still finance essential growth."

Westinghouse Electric Corp. billed \$475,686,000 in sales during the quarter as compared with \$225,366,000 in the strike-scarred first quarter last year. Net income was \$14,198,000 as compared with a net loss of \$18,575,000 last year. A 50-cent dividend on common stock and 95 cents on 3.8% Series B preferred will be paid June 1 to holders as of May 6.

Philco Corp.'s sales edged up to \$99,090,000 from \$92,476,000 in the same period last year. But net income dipped to \$1,107,000 from \$1,517,000.

Glen Alden Corp., parent of the **Mathes Co.**, estimates its quarterly net profit at \$705,000 as compared with \$19,000 a year ago. Flood damage to coal properties affected last year's net. Francis O. Case, president, expects earnings to reach \$3.5 million this year as compared with \$1.6 million last year.

Borg-Warner Corp. reported sales of \$164,543,222, up 1.2% from last year, and net income of \$8,928,356, down from \$9,691,005 last year. Sales and earnings for the year, however, are expected to top 1956, according to Roy C. Ingersoll, board chairman.



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Air-cooled
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GARMAN CO., INC., St. Louis 23, Mo.

For more information about products advertised on this page use Information Center, page 29.

Electric Motors--

(Concluded from Page 1, Col. 3) insulations are making their appearance this year.

Radical changes in hermetic compressor design can be expected in the next 5 years with the development of the hotter and smaller motors.

Schierloh pointed out that these new motors will be more economical to build and to replace. But he agreed with the servicemen that the industry will probably go through another change in shaft sizes similar to the one that occurred with the recent change in NEMA frame ratings.

On lubrication of motors, he voiced the opinion that oil in the wrong place is one of the "poisons" of motor life.

"Use the least amount possi-

ble," he said. "Your experience will be the only way to tell. The manufacturers' instructions give the minimum under normal conditions. We cannot give any definite instructions today but we hope to be able to in the future."

He warned that oil should be kept off the outside of the motor as it collects dirt and dust and affects the proper cooling of the motor. Further, if oil is seen on the shaft at the motor housing the motor is over oiled.

N. Y. Area Room Unit Shipments Up 22%

NEW YORK CITY—A Consolidated Edison report covering five boroughs of New York plus Westchester County estimates that New York distributors shipped 188,739 room air conditioners in 1956. This is an increase of 21.5% over the 155,341 figure reported for 1955.

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PATENTS

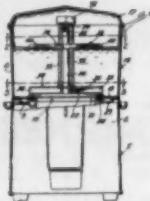
Week of Jan. 22
(Concluded)

2,778,201. FREEZING DEVICE. Edmund F. Schweller, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Nov. 3, 1954, Serial No. 466,485. 2 Claims. (Cl. 62—108.5)



1. A freezing device comprising, an elongated tray, a grid within said tray, said grid including a plurality of spaced apart transverse upright walls extending continuously across said tray and a single upright wall extending longitudinally of the tray through said transverse walls and immovably interlocked therewith relative thereto, said walls dividing the interior of said tray into rows of compartments in which water is to be frozen into separated ice blocks, at least the long side walls of said tray being inclined outwardly from the bottom to the top thereof, a plurality of separate and independent ice ejecting members associated with said immovable longitudinal grid walls, one of said ice ejecting members being disposed between each of said plurality of transverse grid walls and straddling said longitudinal wall, said ejecting members each having legs lying along and engaging the sides of said longitudinal grid wall and a bight portion intermediate said legs underlying said longitudinal grid wall, said bight portion of said ejecting members being secured to the bottom of said longitudinal grid wall whereby either leg of each of said ejecting members is pivotally movable independently of the other leg thereof relative to said immovable longitudinal grid wall, a portion of the legs of said ejecting members being extended upwardly beyond the top of said immovable longitudinal grid wall to provide finger engaging tabs thereabove offset relative to one another in a direction lengthwise of said device, and one of said tabs on an ejecting member being selectively engageable to apply force thereto and move a leg of said member away from said immovable longitudinal grid wall without moving the other leg thereof to pry a single ice block at a side of said longitudinal grid wall against an inclined wall of said tray to elevate the block relative to the tray while leaving all other ice blocks in the device bonded to walls of said grid and tray.

2,778,202. DISPENSER FOR SEMI-FROZEN BEVERAGES AND AGITATOR MEANS THEREFOR. Harry C. Fischer, Canal Winchester, and Louis P. Benua, Gahanna, Ohio, assignors to The Ebo Co., Columbus, Ohio, a corporation of Ohio. Application Feb. 14, 1955, Serial No. 463,049. 2 Claims. (Cl. 62—114)

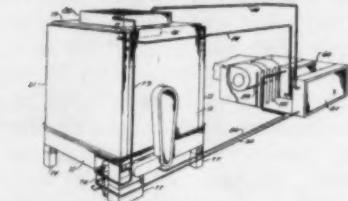


1. In a dispenser for semifrozen beverages; a receptacle body having upstanding side walls and a bottom; a heat-transfer plate carried by and forming a part of the bottom of said receptacle, said plate having an upper flat surface arranged for direct contact with a beverage contained in said receptacle body; means for cooling said plate and a beverage contained in said body to at least partially freeze the beverage; rotary agitator drive means extending upwardly from the contact portion of said plate to above the normal level of a beverage contained in said receptacle body; a combined agitator and scraper connected to be driven in rotation by said agitator drive means and disposed immediately above the upper surface of said plate for removing frozen beverage particles formed thereon during operation of said dispenser; and a second agitator driven by said drive means and slidably mounted thereon above said agitator and scraper, said second agitator having a pair of radially opposed and angularly pitched blades thereon operable during rotation of said drive means to maintain said second agitator at or near the upper surface of a beverage contained in said receptacle body for imparting stirring movement to the upper regions of the beverage during agitation of the lower regions thereof by said combined agitator and scraper.

2,778,203. AIR CONDITIONING SYSTEM HAVING A COOLING TOWER OR THE LIKE. William F. R. Griffith, Tucson, Ariz. Application April 13, 1954, Serial No. 463,937. 10 Claims. (Cl. 62—129.)

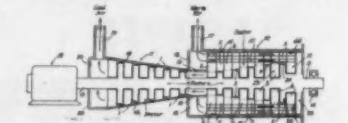
6. The combination with a cooling tower or the like of a type comprising a bottom cool water reservoir, an evap-

orative pad system, a water system delivering water to said pad system and an air system for delivering air through said pad system to a discharge opening of a space conditioning system including water coils, means for withdrawing water from said reservoir and delivering the same



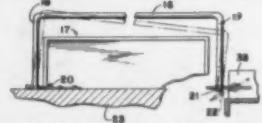
through said water coils and thence to said water system above said evaporative pads, a refrigerant compressor, a refrigerant condenser positioned to receive cool air from said air discharge opening, and a refrigerant expansion coil receiving liquid refrigerant from said condenser, and means for passing air through said water and refrigerant expansion coils.

2,778,204. CONDITIONING APPARATUS AND COMPRESSOR THEREFOR. George E. Frank, Eugene, Ore. Application Aug. 10, 1953, Serial No. 373,190. 13 Claims. (Cl. 62—136.)



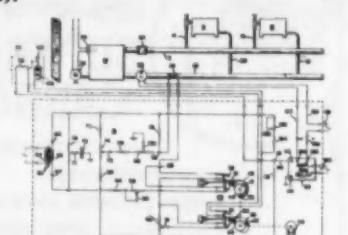
1. An air conditioning system comprising an axial air compressor, a motor for driving the compressor, means comprising substantially axially extending air passageways in the stator of the compressor, means for directing cooling air into said passageways for cooling the compressed air through heat exchange relation within the compressor with a current of relatively cool air, said passageways being substantially coextensive with the stator blading, a compressed air motor arranged to aid in the drive of the compressor, the latter discharging the cooled, compressed air into the air motor for expansion therein, and separate discharge conduits for the heated cooling air and the cooled expanded air.

2,778,205. PANIC LATCH FOR REFRIGERATOR DOORS AND THE LIKE. Casimir Gazik, Cleveland, Ohio. Application Sept. 10, 1954, Serial No. 455,238. 1 Claim. (Cl. 109—63.5.)



A panic lock for refrigerator doors and the like, comprising a panic bar secured to the inside of a refrigerator door, said bar being moveably secured at the hinge side of the door; the other end of said bar contacting a latch and latch mechanism, said latch and latch mechanism being mounted in the door and adapted to be operated from the exterior of said door by a pin member passing through the door; an elongated tray having side and end walls on the inside of said door, said panic bar surrounding and extending longitudinally of said elongated tray adjacent the top thereof and being parallel with the side wall of the tray, whereby the door may be opened from the interior by contacting the panic bar and the latch mechanism, said door may be opened independently of the mechanism on the exterior side of the door whether in a locked or unlocked position.

2,778,206. TEMPERATURE CONTROL WITH NIGHT SET-BACK. Gene T. Gaddis, Edina, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Oct. 5, 1953, Serial No. 384,122. 11 Claims. (Cl. 236—46.)



1. In a temperature control apparatus, control means for controlling temperature changing apparatus; network circuit means for controlling said control means, said network circuit comprising a pair of power input terminals and a plurality of parallel branches connected between said terminals; a first branch including a resistance element having a movable tap thereon; a second branch including a tap and temperature responsive resistance means responsive to the effectiveness of said temperature changing apparatus;

tus; and a third branch including an output terminal, temperature responsive switch means, time responsive switch means, and outdoor temperature responsive resistance means; connection means including a second output terminal connecting said movable tap and said tap; and further connection means connecting said output terminals to said control means, said first mentioned switch means rendering said controlling means inoperative during selected periods when a condition indicative of a need of operation of said temperature changing apparatus is above a predetermined value.

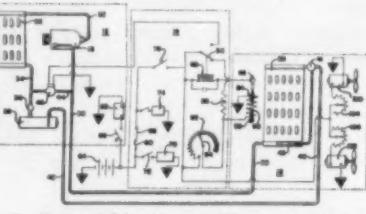
Week of Jan. 29

2,779,066. INSULATED REFRIGERATOR WALL. Richard S. Gangler and Edmund F. Schweller, Oakwood, Ohio, assignors to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application May 23, 1953, Serial No. 289,482. 8 Claims. (Cl. 20—4.)



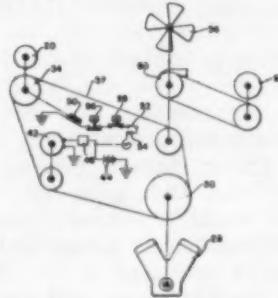
1. In a refrigerator, an outer wall, an inner wall spaced from said outer wall, insulation between said walls, said insulation comprising outer bag means, filler material within said bag means having voids therein, and a gas filling said voids, said gas having a coefficient of thermal conductivity less than that of air, said bag means having a thickness less than the distance between said walls, and compressible insulation in the space between said bag means and said walls whereby expansion and contraction of said bag means is permitted without distortion of said walls.

2,779,162. AUTOMOBILE REFRIGERATING APPARATUS. Marshall W. Baker, Charles F. Henney, and Hal C. Johnston, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Dec. 4, 1952, Serial No. 324,082. 5 Claims. (Cl. 62—4.)



5. In combination with an automobile having a variable speed engine for propelling the same and having a passenger compartment, a compressor, means drivably connecting said compressor to said engine, an evaporator, a condenser, means connecting said evaporator, condenser and compressor into a closed refrigeration system, pressure reducing means between the outlet of said condenser and the inlet of said evaporator, means controlling the cooling of air by said system including a solenoid, a source of electrical power, means including a thermally operated switch for connecting said solenoid to said power source so as to render said system operative to cool air for said passenger compartment when cooling is required, means including a heater for varying the temperature at which said thermally operated switch connects said solenoid to said power source, and adjustable means for varying the heat output of said heater.

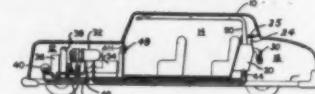
2,779,163. VEHICLE REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Aug. 21, 1953, Serial No. 375,649. 2 Claims. (Cl. 62—4.)



2. In combination with a passenger automobile having an engine compartment and a passenger compartment, an engine within said engine compartment for propelling said automobile, said engine including a heat dissipating radiator, an evaporator, means for circulating air to be conditioned in thermal exchange relationship with said evaporator and for discharging said air into said passenger compartment, a compressor, a condenser adjacent said radiator, refrigerant flow connections between said compressor, condenser and evaporator,

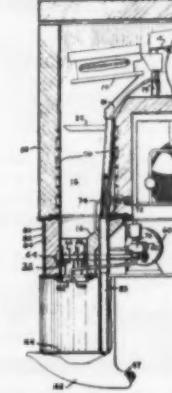
fan means for circulating air in thermal exchange relationship with said condenser and said radiator, power transmitting means between said engine and said compressor and said fan means, said power transmitting means including variable speed drive means for varying the speed ratio between said compressor and fan means and said engine whereby the speed of said fan means relative to the speed of said engine is greater at low engine speeds, said fan means being driven by said means for varying said speed ratio, a clutch connected between said variable speed drive means and said compressor, and means for operating said clutch so as to disengage said compressor from said variable speed drive means.

2,779,164. REFRIGERATING APPARATUS FOR AN AUTOMOBILE. Harry C. Doane, Lake Fenton, Mich., assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Oct. 15, 1953, Serial No. 386,300. 8 Claims. (Cl. 62—6.)



1. In an air conditioning system for installation in an automobile having a passenger compartment and a luggage compartment, the combination, a conditioning chamber adapted to be mounted in said luggage compartment for supplying conditioned air to the passenger compartment of the automobile, means for passing a stream of fresh air to said chamber, means for passing a stream of return air from said passenger compartment to said chamber, means for mixing the streams of fresh and return air passing to said chamber, air conditioning means in said chamber for varying the temperature of said mixture, damper means for controlling the supply of fresh air, and damper motor means responsive to the temperature of the air in said luggage compartment for causing said damper means to move toward closed position in response to a predetermined change in the air temperature within said luggage compartment.

2,779,165. ICE AND WATER DISPENSER. Joseph R. Pichler, Richard M. Brubaker, Thomas C. Shuler, Jr., and Emerson L. Wark, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Jan. 19, 1954, Serial No. 404,842. 9 Claims. (Cl. 62—105.)



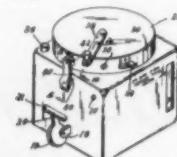
1. In a self-contained water cooler and automatic ice maker and dispenser, a cabinet, means within said cabinet forming an insulated ice cube storage bin, a water cooling coil arranged in thermal exchange relationship with said ice cubes while in said bin, a delivery chute adjacent the bottom of said bin, ice cube dispensing means for delivering a predetermined quantity of whole ice cubes from said bin into said delivery chute, means for crushing ice cubes, said last named means being arranged to receive ice cubes from said bin and to dispense crushed ice through said delivery chute, means for dispensing water from said coil into said delivery chute, and drain means beneath said delivery chute for draining away excess water and melted ice, said bin being relatively long and narrow and having a V-shaped bottom with the vertex of the V arranged to deliver ice cubes to said ice cube dispensing means and to said ice crushing means.

2,779,166. ICE TRAY GRID. Frederick W. Sampson, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application June 15, 1954, Serial No. 436,875. 1 Claim. (Cl. 62—105.5.)



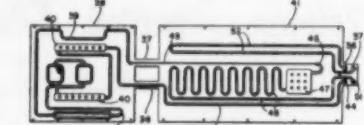
A unitary grid structure adapted to be removably disposed in an ice tray for dividing the interior thereof into rows of ice block forming compartments comprising a long wall member and an actuating wall member substantially coextensive therewith disposed thereabove, said grid also comprising a plurality of spaced apart walls extending transversely across and being movably interlocked with said partition wall members, means at one end of said grid structure for shifting said actuating wall member lengthwise along said long wall member of said partition, said actuating wall member having portions thereof adapted to progressively engage and move said transverse walls one after the other in succession relative to said long wall member, each of said transverse walls having an elongated closed wall aperture therein, the aperture in each of said plurality of transverse walls being identical in contour and of varying width from end to end thereof, said actuating wall members and said long wall member being extended one after the other respectively through the closed wall identically through the closed wall during assembly of said grid, a spring clip inserted into the widest part of the aperture in the transverse wall at the end of the grid opposite said one end thereof in overlapping relationship with both of said partition wall members, and said spring clip substantially filling and reducing the width of said widest part of the aperture to that of the width of the narrowest part thereof for limiting lateral movement of said partition wall members with respect to one another at said opposite end of said grid upon shifting said actuating wall member.

2,779,167. DEVICE FOR FREEZING ICE CREAM AND ICES. Thomas Lo Faro, Brooklyn, N. Y. Application Dec. 20, 1954, Serial No. 476,518. 1 Claim. (Cl. 62—114.)



A portable freezer for ice cream and ices for use with an electrical refrigeration apparatus comprising an outer container adapted to be inserted into said apparatus, an inner container removably seated in said outer container, a scraper blade and agitator assembly removably and rotatably mounted in the inner container, a removable cover for the containers, a motor on the cover having a driving connection to said assembly, and means releasably clamping the cover to the outer container, the outer container including a top wall having a center opening and an upstanding neck bounding said center opening, the cover including a depending peripheral flange engaging snugly against and surrounding said neck, said motor being mounted upon the underside of said container, and being hermetically sealed, the motor including a crank for winding the same, said crank being rotatably mounted upon the cover and including at its outer end a knob adjustable to selected positions relative to the length of the crank in one of which positions the knob extends upwardly, said knob in a second position extending downwardly and in a third position extending laterally of the crank.

2,779,168. REFRIGERATING APPARATUS. James W. Jacobs and Richard E. Gould, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Sept. 8, 1955, Serial No. 533,063. 8 Claims. (Cl. 62—116.)



8. In a refrigerating system, a compressor, a one piece roll-formed plate member having a condenser duct in one portion thereof, an expansion duct in another portion of said member remote from said condenser duct and a restrictor duct, said condenser duct and said expansion duct being connected in series flow relationship in the order named with said compressor, said restrictor duct being relatively small in cross sectional area as compared to the other ducts and forming a single series flow passage in said plate member of continuous capillary size intermediate said condenser duct and said expansion duct, and said capillary passage constituting the sole means for controlling flow of refrigerant from the condenser duct in said one portion of said plate member to the expansion duct in said another portion thereof.

2,779,169. REFRIGERATOR WITH CAN DISPENSER. Verlos G. Sharpe and Edward C. Simmons, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Jan. 18, 1954, Serial No. 404,922. 7 Claims. (Cl. 62—117.3.)

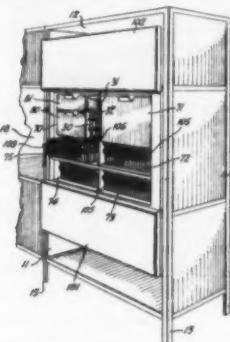
1. In a refrigerating apparatus including a cabinet having a food storage compartment therein provided with a front opening and a refrigerating system including means for cooling said compartment, opposed door supporting members associated with said compartment having walls forming two spaced apart grooves facing one another and extending horizontally from said compartment front opening rearwardly into said cabinet, a vertically swingable door for said compartment opening having horizontally extending edges, spaced flanges pro-

(Continued on next page)

PATENTS

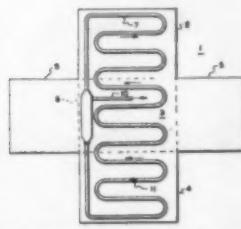
(Continued from preceding page)

extending from the inner face of said door adjacent one of said horizontal edges thereof, hinge pins near said one edge of said door projecting laterally from said flanges and extending into said grooves, stop means on the inner face of said door intermediate said flanges and adjacent said one horizontally extending door edge, said stop means being engage-



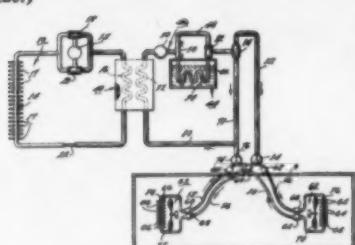
able with said door supporting members and so spaced from said hinge pins as to cooperate therewith and support said door in a horizontal position at the front of said compartment when the door is swung from a vertical closed position to an open position, said stop means and said hinge pins being arranged to permit said door, while in said horizontal open position, to be slid inwardly of said cabinet along said grooves of the door supporting members, and said stop means being releasable from said grooves while the door is in its said horizontal open position to remove said door from the cabinet.

2,779,170. EVAPORATOR CIRCUIT. Douglas A. Solley, Jr. and Frank A. Schumacher, Erie, Pa., assignors to General Electric Co., a corporation of New York. Application June 16, 1954, Serial No. 437,252. 1 Claim. (Cl. 62-126.)



An evaporator construction including at least top, back and bottom walls, a refrigerant circuit including a vertically arranged chamber on the back wall and a continuous tube disposed about said top, back and bottom walls in cooling relation therewith, the ends of said tube, being connected to the upper and lower ends of said chamber to provide a continuous refrigerant circuit, an opening in the portion of the tube disposed about the bottom wall through which liquid refrigerant is supplied to the circuit, a suction conduit connected to the upper part of said chamber for withdrawing vaporized refrigerant from said chamber, said chamber being of a greater diameter than said tube, the lower end of said tube being connected to said chamber below the level of liquid refrigerant therein, the upper end of said tube being connected to the upper end of said chamber and extending downwardly into the upper portion of said chamber below the suction conduit connection to discharge liquid and vaporized refrigerant into said chamber in a downward direction away from said suction conduit connection so that liquid entrained in the vaporized refrigerant is separated therefrom in said chamber prior to the withdrawal of the vaporized refrigerant through said suction conduit.

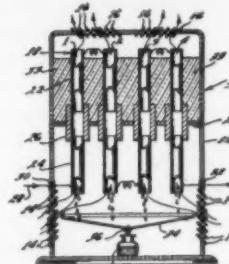
2,779,171. ROOM TEMPERATURE CONDITIONER. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America, a corporation of Delaware. Application Jan. 4, 1954, Serial No. 401,798. 3 Claims. (Cl. 62-129.)



1. A thermal conditioning system for an enclosed compartment comprising a heat pump system including a compressor and heat exchange elements, one of said heat pump system heat exchange elements being located outside of said compartment, a secondary fluid circulating system including a circulator and heat exchange elements, one of said secondary fluid system heat exchange elements being disposed in heat exchange relationship with one

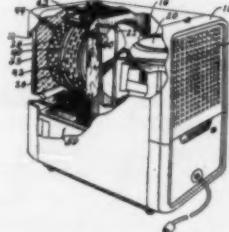
of said heat pump system heat exchange elements, a heat storage element, one of said secondary fluid circulating system heat exchange elements being disposed in heat exchange relationship with said heat storage element, another of said secondary fluid system heat exchange elements being portable and being enclosed within said compartment, and supple tubing, said portable heat exchange element being connected as a part of the secondary fluid system by means of said supple tubing.

2,779,172. THERMO-ELECTRIC DEHUMIDIFIER. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America, a corporation of Delaware. Application Sept. 28, 1954, Serial No. 458,836. 10 Claims. (Cl. 62-140.)



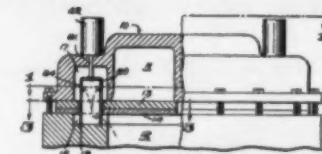
1. A dehumidifier comprising means providing a substantially vertical column of air, means disposed in heat exchange relationship with the lower portion of said column for cooling said air below its dewpoint to liberate moisture therefrom, means spaced from said lower portion of said column and disposed in heat exchange relationship with the upper portion of said column for heating said upper portion of said column to provide in cooperation with the surrounding atmosphere a rising column of air, and said heat providing means providing an excess of heat over the heat absorbed by the cooling means to expand the air in said column.

2,779,173. DEHUMIDIFIER HAVING UNITARY EVAPORATOR-CONDENSER PLATE. Clifford H. Wurtz, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application April 25, 1955, Serial No. 503,481. 7 Claims. (Cl. 62-140.)



1. In a unitary portable dehumidifying apparatus having a common supporting means, a refrigerant evaporating means, a refrigerant condensing means, a refrigerant compressing means connected in series refrigerant flow relationship with said condensing means and said evaporating means, and means for circulating air to be dehumidified first in heat exchange relation with the evaporator means and then in heat exchange relation with the condensing means, said refrigerant evaporating means and condensing means comprising a one-piece roll bonded heat exchange element having one set of refrigerant passages formed therein for condensing and another set of refrigerant passages for evaporating refrigerant.

2,779,528. COMPRESSOR UNLOADERS. Erik H. Jensen, Staunton, Va., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Sept. 29, 1955, Serial No. 537,432. 5 Claims. (Cl. 230-21.)

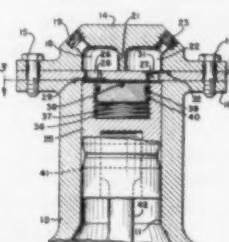


1. A compressor having a cylinder in which gas is compressed, a cylinder head for said cylinder, said compressor having a cavity off-set with respect to said cylinder, said compressor having a slot opposite one end of said cavity for connecting said cylinder to said one end of said cavity, a hollow piston in said cavity, said piston normally extending across said slot and having an open end with an edge in contact with the side of said slot opposite said cavity, and having an opening connecting with said cavity, and means for moving said piston from across said slot for permitting gas to flow between said cavity and said cylinder.

2,779,533. REFRIGERATING APPARATUS. Elmer O. Stout, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Sept. 3, 1955, Serial No. 307,605. 5 Claims. (Cl. 230-21.)

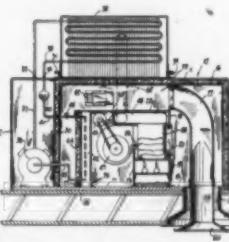
1. In combination, a compressor having a piston and cylinder, an ele-

ment carried by said piston and having a substantial surface area exposed to the interior of said cylinder, said element being adjustable longitudinally relative to the length of said piston to increase or decrease the cylinder clearance within said compressor, said element having a circumferentially



extending groove in its outer periphery, and an O-ring disposed within said groove for frictionally engaging a portion of the piston so as to restrain movement of said element relative to said piston.

2,779,572. HOUSING FOR AIR CONDITIONING UNITS. Clarence J. Holman, Cleveland, Ohio, assignor to Alco Refrigeration Sales & Service, Inc., Cleveland, Ohio. Application Oct. 12, 1953, Serial No. 385,506. 1 Claim. (Cl. 257-9.)



In apparatus for heating and cooling air, a housing, comprising a hollow case member including top, bottom, front, rear and side walls; a first partition positioned within the case abutting the top, bottom and side walls thereof and spaced from said rear wall to define a compressor compartment; a second partition, positioned within the case abutting the top, bottom and side walls thereof, spaced from said front wall, to define a manifold compartment; a third, L-shaped, partition positioned within the case between the side walls thereof and including a horizontal portion abutting the second partition and a vertical portion, dependent therefrom, abutting the bottom wall; said horizontal portion being intermediate and parallel to the top and bottom walls, and spaced from said first partition, said vertical portion being spaced from and parallel to the first partition and defining with said horizontal portion, second partition, bottom and side walls, a lower chamber; said vertical portion having an opening therethrough; a filter unit mounted in said opening; said second partition having a first opening positioned between the top wall and the third partition and a second opening communicating with said lower chamber, positioned between the bottom wall and the third partition; a fourth partition positioned within said lower chamber abutting the horizontal portion of the third partition and the bottom and side walls of the case, said partition having an opening therethrough aligned with the second opening of the second partition and defining with said element a first and second compartment; a cooling unit positioned in the first compartment, a heating unit positioned in the second compartment, a blower mounted in the fourth partition opening; said cooling and heating units being joined through said blower mounted in the fourth partition opening; said bottom wall having an air outlet opening therethrough within the confines of said manifold compartment, an air inlet duct mounted within the manifold compartment having one end connected to the first opening of the second partition and the other end centered within the air outlet of the manifold, the diameter of the inlet duct being less than the diameter of said outlet opening; said third partition defining within the case walls an L-shaped upper chamber for untreated air, communicating at one end with the air inlet duct and at the other end with the lower chamber, containing the aforesaid filtering, cooling, blowing and heating units for the conditioning and delivering said conditioned air to the manifold outlet.

2,779,618. REFRIGERATOR DOOR LATCH. William R. Jewell, Lyndon, Ky., assignor to General Electric Co., a corporation of New York. Application Dec. 6, 1954, Serial No. 473,206. 3 Claims. (Cl. 299-332.)

1. A door latch for latching a refrigerator door in a closed position, said latch comprising a supporting structure, a latch bolt pivoted on said structure and movable between a latching position and a retracted position, said bolt having a strike-engaging latching arm and a control arm for moving said bolt between said positions, an over-center mechanism effectively yieldably to hold said bolt in said latching and retracted positions, said mechanism including a spring and a single link connected between

said bolt and said structure, actuating means for moving said bolt from said latching position to said retracted position to permit opening of said door, said actuating means including slot means defined in said supporting structure, a roller mounted for rolling



movement in said slot means and engaging said control arm, a push rod engaging said roller, and a pivoted handle for operating said push rod whereby said push rod forces said roller to move in said slot means against said control arm and operate said bolt from said latching position to said retracted position, said control arm upon the closing of said door engaging a strike to snap said bolt from said retracted position back to said latching position.

2,779,829. TIME SWITCH MECHANISM. Joseph J. Everard, Manitowoc, Wis., assignor to Paragon Electric Co., Two Rivers, Wis., a corporation of Wisconsin. Application March 19, 1954, Serial No. 417,453. 13 Claims. (Cl. 200-35.)



1. In combination, a double throw switch device tending constantly to assume the first of the two positions between which it alternates, a movable restraining element mounted beside and constantly tending to engage

said switch device and hold it in its second position, a slowly rotatable dial adjacent to said element, means on that dial to engage said element and render it inoperative to restrain the switch device during at least one predetermined period in each revolution of the dial; a second movable restraining member for said device; a rapidly moving dial coaxial with the slow dial and having thereon means to operate said second member; for alternately holding the switch device in its second position and allowing it to assume its first position when not otherwise restrained; and means to drive the dials in such time relation to each other that the said switch device engaging means on the rapidly moving dial recedes from the switch device to allow the latter to assume its first position after the beginning of each of the aforesaid periods, and then forces the switch device into the second position before the end of the same period.

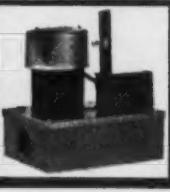
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ATTENTION: OWNERS of Baker compressors and condensers. We carry complete stock of repair parts for all Baker ammonia and Freon compressors and condensers. Valves and ice plant equipment. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska.

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Milk Sanitation Standards--

(Concluded from Page 1, Col. 3) milk and milk products shipped in interstate commerce or which affects interstate commerce for consumption as milk and milk products in any state, county, or municipality of the United States."

The measure provides that the milk ordinance and code recommended by the U. S. Public Health Service be adopted and applied uniformly throughout the country to all milk and milk products (as defined in the code) shipped in interstate commerce or which affect interstate commerce.

It further provides that, after enactment, no other law through use of sanitation standards, standards of identity, or sanitation practices shall limit or prohibit the shipment of milk and milk products in interstate commerce which meet the requirements of the U. S. Standard Milk Ordinance and Code.

The bill would establish "suitable" provisions for amendment of the ordinance and code after public hearing, and for the administration and enforcement of the code by the U. S. Surgeon General.

Specific Exemptions

Specifically exempted from the bill are milk used within state lines and milk used for manufactured dairy products such as butter and cheese. The Federal milk marketing orders are not mentioned in any way.

Latest figures show that the U. S. Milk Ordinance is already law in 12 states, Hawaii, and Alaska; 472 counties; and 1,364 municipalities. It was pointed out, Wisconsin is one of 22 other states for which the Federal code was the model in establishing the state code.

The 12 states now employing the U. S. code are Arizona, Colorado, Delaware, Florida, Louisiana, Montana, Nevada, Oklahoma, Oregon, South Carolina, Washington, and Wyoming.

Would Ease Marketing For Midwestern Dairies

HR 6750 reportedly is intended to make it easier for midwestern dairymen to sell milk in the big eastern markets.

Backers claim many markets have established regulations which greatly restrict the sale of outside milk. They contend that Federal sanitary regulation would eliminate local "milk monopolies" and provide consumers with lower cost milk. Opponents maintain that limitations must be maintained to protect nearby dairymen.

16 Major Firms Endorse Bill's Principles

The principle embodied in the bill was endorsed by 16 major dairies, creameries, and milk plants at a meeting in Eau Claire, Wis. earlier this year, it was reported.

An information statement on the bill, released by Congressman Johnson's office, said, in part:

"The growth of the population of the U. S. shifts in geographical location and changing densities thereof, the vast improvement of production and processing techniques, the improvement of highways, the rapid development of refrigerated

Waterman-Waterbury Purchase--

(Concluded from Page 1, Col. 2)

transportation on the nation's highways and other transportation lines, refinements in packaging, all have led to a great increase in the shipment of milk, cream, and the products thereof in interstate commerce for consumption by our urban population as fluid milk, fluid cream, and the products thereof.

"Multiplicity of present regulations and variations of them have led to wasteful and unnecessary duplication of inspection, exorbitant inspection fees, refusal or failure to inspect milk supplies from other local sources, and arbitrary mileage and other limitations of the area in which the milk supply for urban consumers will be inspected."

The bill was referred to the Committee on Interstate and Foreign Commerce.

Cross, formerly manager of the Ninth Federal Reserve district regional office of the Reconstruction Finance Corp., and chief of the financial assistance division of the Small Business Administration, and now president of the Arthur W. Carlson Co., Minneapolis financial advisory service; and Edward A. Danforth, Minneapolis attorney.

Sedgwick, a director of the National Warm Air Heating & Air Conditioning Association, will remain as president. Dervey will become executive vice president, and Danforth vice chairman of the board and general counsel, Cross said. Dervey, Carlson, and Erickson will also serve on the board of directors.

Cross and John D. Holmgren, secretary-treasurer, remain on the board.

Optimism of the new management indicates, Cross said, the company's intention to aggressively strengthen its relative position within the industry. Waterbury "now ranks within the first 20 among more than 400 warm-air heating manufacturers in the United States," it is claimed.

The company's new program, as it moves into its second half-century of operation, will include "carefully-integrated sales, merchandising, and manufacturing techniques."

Waterbury has already opened up several new markets within the past six months, Cross said. "Expansion into these selected areas across the northern tier of states increases the company's already strong sales position in the country's 'cold belt,'" it was stated.

"To assist distributors, Water-

bury will continue to focus its new programming on sales and promotion services to dealers."

No change in management or operation of Waterbury's subsidiaries is contemplated by the new owners. These firms are Waterbury Heating Supply Co. of Minneapolis and Madison, Wis.; Waterbury Supply Co. of Peoria, Ill.; and retail dealers in Minneapolis and Dubuque, Iowa.

Present officers and operating officials of Waterbury will continue in their present assignments, the announcement said.

They include Cross, Sedgwick, Holmgren, and Stuart A. Smith, vice president and sales manager; Roy L. Lonson, vice president, production; F. W. Legler, vice president, New England division; Howard Boyer, vice president, foreign operations; Jack Searles, assistant to the president; and Charles A. Reichelderfer, director of engineering.

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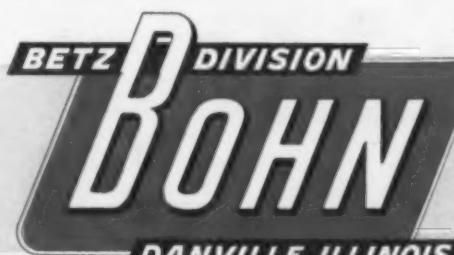
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Only BOHN units contain special condensate drains to separate water from air flow in either direction! Air flows efficiently through the coil for maximum heat transfer without dead air space.

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